THE CENTURY BOOK FOR MOTHERS

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A PRACTICAL GUIDE
IN THE REARING OF
HEALTHY CHILDREN

BY

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PREFACE

IN preparing "The Century Book for Mothers" the authors have endeavored to keep in mind two queries: What ought an intelligent mother to know, and, beyond that, what would she wish to know, regarding the care of her child?

As regards the first, the writers have believed that she should understand matters of hygiene rather than the treatment of diseases; that she should know the things which go to the establishing and preserving of healthful conditions; and that she should be aided in the recognition and avoidance of disease, rather than in its cure. In other words, their object has been to help the intelligent mother to become the alert and judicious guardian of the nursery, rather than to tempt her to play the physician and to dabble in dosing. In the first part of the book special emphasis has been laid on the caring for children, including the feeding, clothing, and housing. The subject of diseases, systematically even if somewhat briefly discussed in Part I, receives additional treatment in Part II.

As to the inquiry—What kind of information, beyond what she ought to possess, is the mother likely to seek?—the writers could think of no better way of giving such information than to follow the questions actually put by mothers to them as editors, for many years, of a magazine devoted to the care of children. The second part of the book is therefore almost entirely made up of a large number

of questions concerning the many perplexities of daily nursery life, together with the answers furnished. The authors believe that in so doing they have more nearly approached the mother's point of view, and better met her needs, than by any systematic treatment of nursery matters they could have devised. Their aim has been to cover in this way the common ailments and troubles of early childhood, and they hope that, all in all, the volume may be found an instructive and safe guide for mothers in the care of children both in health and in illness.

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PART I

THE GENERAL CARE OF CHILDREN

THE CENTURY BOOK FOR MOTHERS

I

THE PREPARATION FOR MOTHERHOOD

IN one sense, the care of a child begins with its conception. But the ante-natal care cannot be given directly to the unborn; it must be bestowed upon the mother. Whatever she would do for its welfare must be performed through judicious care of her own health. Let it be understood at once that there is no special or patent regimen to be followed during pregnancy. Success attends the careful and common-sense application of the ordinary rules of health to the changed conditions that come with pregnancy. Just in proportion as the mother has previously led a hygienic life will the task be an easy one. If she has lived in neglect or defiance of hygiene, then she must "cease to do evil, learn to do well."

DIET

THE diet of pregnancy should be simple and nutritious, but should not, unless by reason of some special disorder, be different from the wholesome diet of a non-pregnant woman. The special restricted dietaries vaunted to insure easy delivery have no such effect, and if the results claimed were really attained they would be merely a saving of some pain on the part of the mother at the expense of her infant's development. As there is a tendency to nausea, flatulence, and

acidity with resulting heartburn, the diet should be not only nutritious but easily digestible. While the derangements just mentioned are most likely of nervous origin, there is no doubt that the digestive power is usually to some degree impaired. The use, therefore, of foods, such as sweets, pastry, and rich articles generally, which are particularly likely to produce fermentation in any state of health, must tend to aggravate these unpleasant symptoms.

There is a tendency during pregnancy to constipation, chiefly from mechanical pressure of the growing womb, or to the exaggeration of such a tendency if it already exists. To some degree this may be combated by the use of foods of a laxative tendency—fruits, coarse cereals, and all the usual articles employed with this intent. In the latter part of pregnancy, when the pressure of the womb upon the other abdominal organs becomes considerable, it is usually wise to moderate the amount of flesh diet, if it has been considerable, and to supply its place with milk and eggs, in order that the tax upon the kidneys may be lessened. The free use of liquids—that is to say, of water or thin nutriment—is valuable, both as further helping the work of the kidneys and as favoring the proper action of the bowels.

DRESS

The dress of the pregnant woman must be entirely free from constriction. Very early in gestation the corset would better be abandoned, or, if worn at all, so loosely laced as to make no pressure. All of the organs, lungs, heart, stomach, bowels, not to mention the womb itself, demand the greatest freedom. There is a new and increased demand for oxygen: the lungs must take in more air, the heart and blood-vessels must convey a more unrestricted supply of the better oxygenated blood. All other sources of constriction, such as tight garments and bands, must be avoided. The garter deserves special mention, as in pregnancy there is a tendency to swelling of the veins of the lower extremities, and

this is aggravated by a tight garter. Some other form of stocking support is preferable when the hose must be kept trimly in position.

EXERCISE AND CLOTHING

Air and exercise conduce to well-being in pregnancy as at other times. The amount of exercise that can be taken will vary very much with cases. The woman who does her own housework or any considerable part of it will not need exercise, for instance, but will need open air. A woman troubled badly with "morning sickness" may be unable for the time being to take outdoor exercise at all, but to her, as to all, air and sunshine will be beneficial, and it should be had if possible, even if it be no more than what can be got in the invalid's bedroom. Assuming that the woman is able to take exercise, how much shall she take? It must stop short of serious fatigue, and it must never be violent, lest, especially in those with a tendency in that direction, it favor or excite miscarriage. In a general way, exercise which gives a feeling of well-being and of only gentle weariness is beneficial and aids sleep.

The customary use of the bath need not ordinarily be interrupted. It aids the functions of the skin, and is still another mode of assisting the kidneys in their functions. The action of the skin may be further assisted by sufficiently warm, but not burdensome, clothing, and the lower limbs especially need protection from chilling when the protuberant abdomen prevents the usual clinging of the garments about the person. Then the warmth of the garments next the skin should be increased. Many women dislike warm under-drawers, but their use at this time, if the weather be cold, is very desirable.

DISCOMFORTS

It is not easy to say at just what point the disturbances of functions usual in pregnancy cease to be normal and become

disorders to be dealt with. Thus, a certain amount of "morning sickness" is so common as to be considered normal, but this symptom may become so severe as to be dangerous. Whenever any of the ordinary functional disorders of pregnancy become really troublesome they are the proper care of the physician. Short of this point, it is desirable that the expectant mother should keep up a certain observation of her own symptoms, without allowing herself to become at all hypochondriacal concerning them. Too much self-consideration is always harmful; too little may occasionally be disadvantageous. In this spirit we may consider what may be done by domestic practice for some of the commonest ailments of pregnancy.

Nausea and vomiting, popularly called "morning sickness," because of their usual occurrence at that time of day, are, as has just been said, almost always present at some time of pregnancy, especially in the earlier months. Sometimes salivation is associated with them or takes their place. Ordinarily their severity is not so great as to demand the interference of the physician, although they may sometimes tax his resources to the utmost. In the simpler cases the discomforts can be mitigated until the symptoms disappear, as they commonly do after the first three months, by attention to all the details of hygiene already suggested, and especially those of feeding and rest. Thus, food should be given in small quantities at a time and proportionately often; easily digested forms of food, such as milk with lime-water or with effervescing waters, nutritious soups or meat extracts, and the like, being chosen if the nausea is severe or persistent. Many patients, if they can remain absolutely quiet in bed until the middle of the forenoon, are able to pass the remainder of the day in comfort at their usual occupations. If the symptoms are more severe it may be necessary to keep the bed continuously for some time.

Another symptom referred to the stomach is heart-burn, generally due to acidity. This is more persistent than nausea usually is, and is perhaps more severe in the later months.

It is best met by antacids—that is to say, alkalis. Those most used are the familiar cubes of magnesium carbonate or other magnesia preparations, lime-water, sodium bicarbonate, or the aromatic spirits of ammonia, both of the latter being dissolved in water when administered.

The flatulence of pregnancy is best met by insuring regularity of the bowels and by correcting disordered conditions of the stomach.

Constipation is to be combated by the same means as in the non-pregnant condition—namely, by mild laxatives, suppositories, or enemata, in addition to the dietetic helps already alluded to.

Swollen veins in the lower limbs are common. If not very severe they can be held in check by regulating the bowels and the wearing of some kind of elastic stocking if necessary. The avoiding of unnecessary standing when the patient is not walking is useful, as is also the raising of the limbs whenever practicable. Similar care is advantageous to relieve effects of pressure elsewhere, as, for instance, upon the bladder, as evidenced by frequent calls to pass water.

CARE OF THE BREASTS

As pregnancy proceeds, progressive changes occur in the breasts and nipples. In many, perhaps most, cases no care is needed beyond the avoidance of pressure upon the parts, which is insured by ampleness of the garments covering them. Occasionally the nipples are so diminutive as to make it probable that the infant will have difficulty in seizing them. In such cases it seems advantageous that the mother should gently draw or coax out the nipples with the fingers morning and evening during the later months of pregnancy. When the surface of the nipples is very tender and shows a tendency to crack or to become excoriated, it may usually be hardened by a daily application of some astringent. Among those commonly used are tannin and glycerin, twenty grains of the former to an ounce of the

latter; alcohol and water, equal parts, with a little alum added; tincture of myrrh and the familiar preparations of witch-hazel. They should be applied with the finger or a soft camel's hair pencil. The nipples should be cleansed carefully with a bland soap, such as Castile, and warm water, and care should be taken to dry them very thoroughly before each application.

THE MONTHLY NURSE

One of the duties of the expectant mother, unless some friend relieves her of the task, is the selecting of a monthly nurse. The choice may be, in small places, a very limited one, and the selection practically forced. But in most large towns at the present time, since nursing has become a recognized profession, quite a number of nurses are usually available. Two elements have to be considered in the nurse—her professional capability and her acceptability. Perhaps more often than not, the physician is not consulted as to the selection. The opinion of female friends as to the nurse's acceptability determines the question. And if the nurse selected is one who has graduated from a good training-school, this method of selection is probably as good as any for ordinary cases. The physician might err upon the other side by considering only the nurse's skill. The writer, when he is asked concerning a nurse, usually considers the circumstances of the household as well as the medical aspects of the case, and submits the names of several nurses likely to be suitable. The patient can then select that one most attractive to herself. The physician can generally learn pretty accurately the professional qualifications of the nurse. The elements that go to make up acceptability, which the physician may be acquainted with or which the patient or her friends may be able to learn about, are her diligence, her disposition and adaptability. Thus, a nurse may be entirely competent, but lazy, in which case details may not be properly attended to. On the other hand—although this is a lesser evil—she may be something of a martinet, and attend

to her duties with a strictness which is tiresome and perhaps unnecessary. Her disposition tells in the ease with which she puts up with the necessary annoyances—and they are many—of the confinement chamber, and the tact with which she gets on with the servants, so that they cheerfully do the extra work put upon them. In the same way her general adaptability counts. Some nurses are excellent when all the resources of a wealthy family are at command, but are useless in cramped quarters. The tactful nurse fits in anywhere, in the luxurious mansion or the narrow apartment, and gives satisfaction above stairs and below stairs alike; and if she departs with the cook's good-will she may be accounted to have earned her blue ribbon. The greatest tax upon her tact will be the excluding, without giving offense, of obtrusive visitors, whose presence and conversation in the lying-in chamber are often harmful to the patient and increase the anxiety of both nurse and physician.

TIME OF CONFINEMENT

The nurse having been selected, her first inquiry is likely to be, "From what date do you wish to engage me?" This opens the question of the duration of pregnancy. The variations of its duration, like those of every natural process, are well known to medical men. Nevertheless, it is equally well known that when the facts relating to the probable beginning of pregnancy are accurately given, this variation is in the great majority of cases within pretty narrow limits. It is indeed surprising how frequently really intelligent women are unable to give the physician even the date of the last period. This is sometimes due to mere carelessness, sometimes to the substitution of a theory for a fact. Practically there is but one method of reckoning—from the last menstrual period, the first day being used as the most certain. When reckoning is made from this first day, the average time to delivery is forty weeks, or two hundred and eighty days, which is just ten ordinary menstrual intervals.

When, as occasionally happens, a known date of intercourse can be reckoned from, the duration is about thirty-nine weeks. It is very desirable, therefore, that the dates of the periods should be kept in some sort of a record, also that it be noted if there was any variation of the date or of the amount of flow. The reason for this last suggestion is this: If a pregnancy begins immediately before a period is due, that period may not be entirely prevented. It may be tardy, or, more likely, shortened very considerably. In such cases the delivery would be expected, not forty weeks from the beginning of the period, but about thirty-nine weeks from a date a little before the period. If the expectant mother has any facts of this nature it will be far better to let the physician know them frankly. It is wise also to keep note of the date when the motions of the child were first perceived, also when they were unmistakable, as these dates will help the physician to check off his calculations, especially in cases in which there is any uncertainty by the ordinary method of counting. Methods of ready reckoning, by tables or otherwise, are many. The best way, the writer believes, is for the patient to make sure of the facts and then lay them before her physician, whose familiarity with these reckonings makes the calculation easy. He can also discriminate between the dates which are certain and those which are approximate.

The date of confinement having been settled as accurately as possible, the expectant mother is able to set the date from which she desires to engage the nurse. The old-fashioned term "monthly nurse" expresses the period for which she is usually engaged, but if the patient's means permit and the nurse is acceptable, it is usually economy to keep her longer, until the mother's strength is entirely restored.

THE OUTFIT OF THE LYING-IN CHAMBER

It is usual, also, to settle with the nurse, if the physician has not given the necessary directions, what outfit shall be

arranged for the lying-in. It is assumed that the lying-in chamber is the one most wholesome, airy, and sunny at command, and that the bed has a good, comfortable mattress upon it. It should not be one upon which a person sick of any communicable disorder has lain, unless it has been thoroughly disinfected—preferably it should be one that has not been used by any sick person at all. The same must apply to the bedding. Certain arrangements for protecting the bed during and after delivery are necessary. These consist of a rubber sheet, over which some absorbent quilt or pad is laid. The rubber should be long enough to reach across the bed, with ends to fasten. A piece of rubber sheeting three yards long by two yards wide is to be procured. Cut it so that the larger piece is two yards square; the remainder is, of course, two yards long and one yard wide. The pads are made of some absorbent substance—commonly absorbent cotton, sometimes wood-pulp—covered with a light, porous fabric, such as cheese-cloth. Of these at least three, preferably four, are required. Two feet square is a convenient size, although the writer prefers one rather larger, say a yard square, for the actual delivery.

The nurse usually makes the bed, but in her absence any one can do it properly by noting the following: First pin the larger rubber sheet over the mattress, completely covering the latter. Then put on the bottom sheet. Next put the narrower rubber sheet across the middle of the bed and cover it with a draw-sheet. On this place one of the pads, the larger if there be one. Under ordinary circumstances, only a pad, or the draw-sheet at most, will be soiled, and when these are withdrawn the patient will have a perfectly dry and comfortable bed beneath her.

In addition she will need four dozen pads to be used as napkins to the vulva. They are made of the same material as the bed-pads, but of appropriate shape and size. Two binders or abdominal bandages are to be provided. They should be long enough to go one and one third times about the hips, and wide enough to reach from the lower margin

of the ribs to the genitals. Shaped binders are sometimes made, but a skilful nurse will pin a straight strip of muslin so that it will fit the person better than any bandage previously modeled when the figure is very different.

For the use of the physician at the time of delivery and of the nurse afterward, quite a number of articles, drugs, and surgical dressings are needed. Those which the physician may need he may have in his obstetrical bag, but in cities most women prefer to get them in advance, especially the anesthetics, so that they are surely at hand in case the physician should be so suddenly called that he cannot go for his bag, or for any other reason should not have the desired articles.

The drugs are ether or chloroform, or both, ergot in some form, and some good spirits, brandy or whisky. The physician will also need some disinfectants. Nearly all these drugs, being poison, can be had, in some States at least, only on prescription, and it is best to arrange with the physician whether or not the patient shall procure them, and, if so, he will give the necessary prescriptions. The disinfectants needed are usually bichlorid-of-mercury tablets, a bottle containing twenty-five; carbolic acid, the deliquesced crystals, four ounces; boric acid, powder two ounces and crystals eight ounces—the crystals are less troublesome to dissolve, as the powder floats; but for some purposes the latter is preferable, hence both are often ordered.

Other things usually ordered are the following: A rubber douche-bag, often called a fountain syringe, to hold three quarts; two glass nozzles for the same; one square douche-pan of agate-ware; three basins of agate-ware or paper, the latter being the lighter; one rubber catheter; one glass catheter; one glass syringe; one pound of absorbent cotton (also, to be made of this cotton, two dozen mops to take the place of sponges, except for the personal toilet, for which the usual large and small sponges are provided); two tubes of white vaseline; three papers of safety-pins; ordinary pins; one cake of Castile soap; one skein of bobbin, from

which, in advance of need, the nurse will cut four pieces ten or twelve inches long. Lastly, a tube containing iodoform gauze is often convenient, and so is a sterilized nail-brush in a tube, to be used for disinfection.

Some of these things may be already in the house. They should in that case be made "surgically clean" by washing and heat. Many of the articles in the list, those of rubber and glass especially, can be boiled without harm. The dry dressings can be sterilized by the heat of a moderately hot oven—one in which a pan of water would simmer or boil lightly will be quite hot enough. If the nurse be in the house in time, she will attend to details, and in any case all the necessary things to be provided in advance should be wrapped carefully and put where they can be found at once. Besides the things to be bought there will be needed a dozen and a half towels old enough to be soft. These are to be put away with the other supplies. At the approach of labor, orders should at once be given that the fires be kept up, so that abundance of hot water may be had; and also that a good supply of ice be on hand, as accidents may occur in which both are much needed.

THE BABY BASKET

Probably long before the expectant mother has made the preparations hitherto described, she will have been getting ready all the dainty outfit of the baby. So much of taste and of maternal solicitude has from time immemorial gone into the making of baby clothes that one might wish to leave the subject in that realm of esthetic sentiment. The consideration of it must nevertheless take its place with the rest that concerns the infant.

The subject of the infant's clothing would better be joined to that of clothing for children in general, and will be deferred for that chapter. In this place will be mentioned only things needed for the baby's first toilet. These are the baby basket and its contents and the baby's bath-tub.

With the growth of luxury the baby's basket has developed from the ancient little wicker basket into a great variety and choice, from simple lined and draped baskets to those upon legs, those of hamper shape with a tray which constitutes the real basket, as well as a great number of variants of these patterns to be found in the shops of cities. The essential is the basket to keep together the toilet articles. The linings and coverings are expressions of taste. The smaller, simple basket has the advantage of taking less room; the basket on legs, a basket-stand, is most convenient, being of comfortable height, and saving a great deal of stooping, which is awkward for one holding an infant in the lap. If room or money cannot well be spared for this pattern, the common basket, when in use, should be placed upon a chair or other suitable support. The hamper pattern seems to the writer to have no real advantage, except as an opportunity for the display of taste. The lower part of the hamper can only be used to hold clothing. This has some advantages, but also has the disadvantages of "living in a trunk." Whatever pattern is chosen, it is convenient to have in its lining various pockets, and to have fixed to it several cushions for pins and the like. It is necessary that this basket contain at the time of labor a number of things which will then be needed. They are:

Safety-pins of various sizes.

Common pins.

A small roll of absorbent cotton.

A number of the cotton mops spoken of.

Vaseline, in tubes, even at the cost of displacing the ornamental vaseline-jar.

Soap in a suitable closed box or jar; glass, celluloid, and metal are all used. The first is perhaps the best.

A baby's hair-brush.

A fine-toothed baby comb is sometimes added.

A very soft, fine sponge and a wash-cloth of some very soft old material for cleansing folds and crevices.

A powder-box and puff are usual and sometimes useful.

Over these two or three towels.

Over the whole basket an old soft wrap, usually an old blanket, is laid for the reception of the baby, and on top of all the cut pieces of bobbin, and, if the nurse has not her own scissors by her, a stout pair of scissors.

Besides all these things, a suit of the clothes selected is made ready. It may be placed in the basket, or the articles may be laid, in the reverse order of their use (that is, that to be put on the child last is put on the towel first), upon a clean towel in some convenient place.

PREPARATIONS FOR THE BATH

The bath-tubs in commonest use are the baby's tin bath-tub or the tin foot-tub used for adults. These will serve well enough if placed upon two chairs or upon a bench to raise them to a convenient height. It is easy to contrive ways in which they may be used in connection with the usual bath-room fixtures. But no tub that we have seen has as many advantages as the bath-tub made of a rubber sheet fastened to a folding-frame, made in imitation of the ancient cross-legged cot bedstead. These are sold in shops, and cost about seven dollars, but they are easily made. A carpenter can make the folding-frame. A strong band of webbing connects the longitudinal bars at either end. The rubber is tacked to the bars and stitched to the webbing, and the whole is complete. Those sold in the shops are often made to "knock down," so that they can be folded up, making a parcel which would slip into a carrier for golf-clubs. But this is not essential, unless for a family of very migratory habits. The shops in great cities are full of contrivances more or less convenient for the baby's toilet. The writer has endeavored only to mention those necessary or most desirable.

The soap for the bath should be bland, one of the super-fatted ones being pretty certain to be unirritating. Castile soap of good quality has stood the tests of generations.

The sponges must be very fine and soft, and have been completely freed from sand. Besides the cleansing which has been given the sponge before it is sold at the pharmacist's, the mother would do well to spend some time in soaking it and examining it for hard substances, which are surprisingly penetrating even to an adult's skin. These cling closely to the tissues of the sponge, and must be torn or cut away.

PRECAUTIONS FOR THE MOTHER

The physician will probably ask for a specimen of the pregnant woman's urine by the time she has advanced to the fifth or sixth month. If, in the pressure of his work, he has forgotten to do so, she should send to him a vial of urine, say four ounces, plainly marked with her name and the date of the passing of the water, with a note asking how frequently he desires subsequent specimens. He will be grateful for the reminder, as by these specimens he can be warned if there be any evidence of damage to the kidneys.

THE VALUE OF A CHEERFUL FRAME OF MIND

Having, as far as practicable, attended to her own health, having engaged her nurse and made all necessary provision for the needs of the lying-in and for the infant, the mother ought to look forward to her delivery with confident cheerfulness. Yet the pregnant condition often begets a depression of spirits, and the delivery is looked forward to as a time of extreme peril rather than as one of triumphant struggle. This state should be combated, not only by the patient herself, but by all her intimate friends. Nevertheless there are persons—it is difficult to find any civil name for them—whose morbid joy it is to visit expectant mothers, especially those pregnant for the first time, and detail to them all the difficult or disastrous labors they have heard of, usually with many gruesome exaggerations of their own. Such persons cause a deal of unnecessary anxiety and suffering. The

answer to their croakings is this: that while sad cases do occur, and will occur again, universal experience shows that the immense majority of children come into the world with safety to themselves and their mothers, and that what was said of old is true to-day: "As soon as she is delivered of the child, she remembereth no more the anguish, for joy that a man is born into the world."

II

THE NURSERY

IN what is written below, the nursery is understood to be that room or those rooms in which young children, and especially the baby, spend most of their indoor hours. In describing the requirements of a nursery, it must be assumed that the mother is free to choose and arrange as she will. But it is also borne in mind that means, occupation, and situation determine to a great degree the extent to which nursery ideals may be attained. This book is not meant for the rich or even the well-to-do alone, and it is hoped that those of limited means may find, in the description of what a nursery should be, hints which will enable them to make the apartment of their little ones wholesome while inexpensive. Whatever the home into which the baby comes, the newcomer is entitled to its best room—not merely because it is the long-expected guest, but because just in proportion to its youth is it susceptible to the influence of its surroundings for good or evil. Adults may tolerate rooms, may even thrive in them, which would debilitate, if not destroy, a young child.

LIGHT AND AIR

THREE things are of prime necessity for the nursery—sunshine, air, and dryness. These are requisite for both the day nursery and the night nursery. If the mother's bedroom must be the night nursery, or if the family living-room must be the day nursery, then these rooms should, as far as

practicable, be selected with reference to the needs of a nursery. To insure sunshine, of course the south is the best exposure; next to it, we think, in this climate, is the east, as the morning sunshine coincides better with the child's waking hours than that of the afternoon; in other respects the western sun is practically as good. So valuable is the sunshine as a purifier that even in summer a sunny room, although it may have to be screened with shades or awnings, is better than one into which sunshine does not come. The air-supply must be pure in quality and adequate in quantity, and the apartment must be as dry as possible. All three of these main requirements—sun, air, and dryness—are better satisfied in a room well elevated from the ground: an up-stairs room being best, but not one under the roof, which would feel changes of heat and cold in an exaggerated degree.

VENTILATION AND HEATING

The question of ventilation involves not only the air-supply, but the getting out of the foul air. There is no necessary connection between it and the problem of heating; nevertheless the apparatus generally employed for heating our houses is in cold weather very largely concerned in the change of air in the rooms. Our common methods of heating are much more satisfactory than our ventilation, and in ordinary houses the ingress of fresh air is much better provided for than is the egress of vitiated air.

The most ancient form of heating apparatus is the open fireplace. It is very wasteful of heat, heats the room unevenly, but is admirable for ventilation. In fact, even a furnace-warmed room in which there is an open fireplace is likely to be fairly well ventilated. But its ventilating power and its unequal heating make it a great producer of drafts, and the floor in its vicinity is a dangerous place for a child in a room so heated. The danger to children from the fire can be guarded against by a high wire fender fastened in place by some adjustable contrivance.

The next is the box or "air-tight" stove, which is a powerful heater, but makes no provision for ventilation. It needs a guard to prevent burns, much as does the open fire. The Franklin stove was invented to save heat while preserving some of the advantages of the open fire, and is a fair sort of compromise. There are various kinds of jacketed stoves with a cold-air supply from out of doors, quite satisfactory for very large rooms, but not very practicable for ordinary houses.

If the fireplace, stove, or Franklin is used, the supply of fresh air practically comes from the windows and doors by penetrating through the cracks, unless some arrangement be made to admit it more systematically. Various patented devices for window-boards are in use, such as the elbow-tubes, which throw the air-current directly upward, which is unobjectionable. But it is not certain that they have real advantages over the old-fashioned, simple window-board, two forms of which are common. One consists of a stout board, about four inches wide, which fits into the window-frame, the bottom of the lower sash resting upon it snugly. The upper edge of this board may be covered with felt to insure neater contact. The sash being thus raised, air enters at its junction with the upper sash, the current being directed upward, and the fresh, cool air is gradually diffused about the room, instead of entering as a horizontal and probably injurious draft. The other form of the board differs from that just described only in being somewhat wider, six to eight inches, and being placed against the sash, felt being interposed if desired. By this arrangement the lower sash may be raised so that its bottom nearly reaches the top of the board or to any less height, or it may be closed completely at will.

In towns generally, and in many country houses, some form of furnace heating is employed, alone or in combination with fireplaces. The commonest as well as the oldest type is the hot-air furnace. Steam and hot-water heating are

more recent and relatively infrequent. Electric heating at the present time is hardly introduced into private houses. The common hot-air furnace has the advantage that the air to be heated is drawn from out of doors, and with very simple precautions can be made fairly pure. These precautions consist in taking the cold air at a height above the ground surface, as may be easily done by carrying the end of the flue up from six to ten feet and reversing its extremity, so that neither rain nor dirt shall fall into it. The open end should be protected by a wire screen, to prevent things being thrown in or animals crawling in. One common defect is that the furnace is so arranged or so managed that it delivers a small quantity of very hot air, whereas a larger volume of air not so highly heated would be more advantageous. Of the other types the hot-water seems the more manageable, but neither has any necessary connection with air-supply.

It will be noticed that none of these plans of heating, except the open fire, includes any plan of getting rid of the vitiated air. If an open fireplace exists and the registers for hot air be placed high on the wall, a very satisfactory form of "base ventilation" exists. If no fireplace exists and no system of ventilation was included in the building of the house, it is very difficult to keep the air of the nursery sweet, except by constant attention to the airing of the room. A device which is not very expensive can be employed if there be a chimney accessible. It is to carry a ventilating-pipe, the mouth of which is near the floor of the nursery, into and for some distance up the chimney-flue. The heat of the chimney creates a current of air upward in the pipe, which is replaced by the air from the nursery. If the pipe can be carried to the roof it need only be against the chimney and not be within it.

Gas-stoves should never be used, as they vitiate an enormous amount of air, unless they are set, like a "gas-log," into the fireplace, where their combustion products can escape up the chimney.

THE PROPER TEMPERATURE

The temperature of the nursery is usually much too high. It should not be higher than 70° F. If uniformity could be secured, probably 65° F. would be sufficiently high. The night temperature should remain as near to the latter figure as practicable, but, despite great care, the temperature will often fall in the latter part of the night. A source of chill ought to be mentioned—namely, the windows; not through ingress of air from without, but by the rapid cooling of air next the glass, which pours down upon the floor to increase the drafts of the room. If the child's bed is unavoidably near a window, in cool weather it should be especially protected by screens; and it is well to make the window inaccessible to the young children by placing before it some piece of furniture not high enough to obstruct light or diminish its usefulness.

LIGHTS

Unfortunately, the same objection made against gas-stoves must be made to some degree to all lights, except the electric, and this is usually too bright for anything but full illumination. A large gas-flame or kerosene-lamp consumes as much oxygen as five or six adults in the room would. Small lights, therefore, are to be used, except when large ones are really necessary. The lamp or gas can be utilized, however, to favor ventilation, if a ventilating-pipe as just described exists, by having its open end wide enough so that the lamp or burner may be placed beneath it.

The most convenient portable night light which we know is that called the "Pyramid Night Light." It is a short, stout candle in a plaster-of-Paris base. This fits a metallic stand, and is covered by a shade or chimney of truncated conical shape. It will burn long enough to last from the mother's ordinary bedtime until daylight. The old-fashioned floating night light is obsolete. There are made also small kerosene-lamps which burn with a very small flame.

If the flame is carefully adjusted so that it burns without odor, they serve very well · if not, these lamps are unsuitable to the nursery.

NURSERY FURNISHINGS

Windows should have guards within or without, to prevent a child from falling out; and blinds or dark shades, to temper the light, are necessary. Similar guards should be at the doors or stair-heads when the children are large enough to run about.

Since in most houses the nursery must, in case of any sickness, be the hospital as well, some parts of its structure and all of its furnishing must be in conformity to this possible use. Its floor must be smooth, so that it can be made clean and kept clean. It is best made of narrow, hardwood boards well and closely laid, the cracks filled with putty or some of the preparations made for the purpose, and well varnished. Cheap carpets in rug form are best. The walls are best painted; if papered it should be with some of the varnished washable papers often used in bath-rooms. Everything should be plain and substantial and with as few dirt-catching recesses as possible. Everything, in fact, in a nursery should be selected after considering two questions: Can it be kept thoroughly clean or completely disinfected if contaminated? and, Can I afford to destroy it if I cannot make it entirely pure?

For these reasons the furniture should be devoid of ornament. The bedsteads are best of metal, those of painted iron having most advantages; the design known as the hospital pattern is probably best of all. There should be no curtains save such as can be boiled or steamed. The mattress and pillow should be of good hair, and the former protected from wetting or soiling by a rubber sheet. Of course, the child's bed, if possible, should not be shared by an adult, and the child should either have its own bureau or cupboard, or at least its own drawers in the bureau. Save for

the turmoil and disarrangement of "sweeping days," an open cupboard of shelves closed with a curtain would probably be kept in better order than any device shut up from inspection. In any case, these necessary receptacles should be arranged so as to be kept clean and aired with the least trouble. Hence shelves within easy reach and not far apart, so that many things are not necessarily put into one pile, are better than inaccessible drawers.

The same reasons of cleanliness, not to mention possibilities of infection, make it advisable that there should be no plumbing in the nursery, and that the latter should not connect with, and preferably should not be near to, a water-closet or even a bath-room. The convenience of such nearness is often dearly paid for.

The furniture, other than the bedstead, cannot well be of metal, and should be carefully selected according to the simple rules just given. Chairs of plain and solid structure —for instance, of bent wood and with cane seats—are far preferable to those of ornamental design, of wickerwork, or upholstered.

Thus far nothing has been said concerning a day nursery. If one can be afforded as well as a night nursery, so much the better. In that case its sanitary arrangements will be the same as those described for the nursery of all work. If the child is to sleep with its mother, then the nursery becomes a day nursery, and the mother's bedroom must be arranged on a plan to suit the needs of a night nursery.

III

THE NEW BABY

WHEN the infant has been delivered—has manifested its presence most probably by loud cries—the physician ties the cord, divides it, and lays the child, warmly wrapped in the blanket provided, aside in a safe place, while he attends to the safety and comfort of the mother. When at length he can properly do so, he returns to the infant, and quickly and carefully inspects it to ascertain if it be normal in development, whether there be defects or blemishes. Those first looked for are usually defects the existence of which would imperil its life or hinder its nutrition, and these are especially imperforate anus, defects or obstructions of the urinary organs, and harelip. The latter interferes directly with sucking, hence with the nutrition of the babe; the anal obstruction, if not relieved by surgery, must soon destroy the child; while the urinary organs, being more often imperfect than obstructed, are less likely to threaten the existence of the child through their defects, and do not need such immediate surgical attention. He will notice, also, if they exist, striking moles, supernumerary fingers, or club-feet. These deformities or defects are the physician's particular care. He will judge, as to moles, whether or not they can be removed, as to supernumerary digits, the proper time for their removal, and will as soon as possible instruct the nurse in the proper manipulations which favor the cure of club-foot.

BABY'S FIRST BATH

Fortunately, all these deformities, although more common than others, are relatively rare, and the cares of the nurse are usually only those which every healthy baby demands. Baby's first bath involves a little more detail than its subsequent ablutions, and it may be described with advantage. This bath cannot, of course, be given by the mother, but it may be useful for her to know its method.[1]

The nurse has already gathered about the fire or the source of heat in the room the necessary utensils—tub, towels, soap, hot and cold water, oil or some kind of grease, powder, and the child's garments. She puts on a flannel apron or lays over her lap a thin soft blanket. She takes the child in its wraps and sits in a low chair, with the baby in her lap. As the wraps are removed the child's body is found to be partly or wholly covered with a greasy, pasty substance called *vernix caseosa*, meaning cheesy varnish. The amount of this varies considerably in different children. Into this the grease is well rubbed before washing. Vaseline is nowadays most commonly used, but lard or oil is at least equally good. The grease is rubbed thoroughly but gently all over the body, and with especial care into the armpits, the groins, around the genitals, and into every crease or fold of the skin. If the varnish is very tough or adhesive, or if the child be not very strong, the washing may be deferred, the child, after the inunction, being again rolled up warmly and left to rest. Ordinarily, however, the bathing immediately follows.

The cheesy matter loosened by the grease is wiped off with a soft cloth or the wrapping-sheet, and then every part is carefully washed with soap and water. The child before

[1] It may be mentioned that some physicians, at least in hospital practice, prefer not to wash the infant at once, but place it in a warm bag, which covers it, except the head, protecting it until the time at which it is to be washed. But the detail of the first bath remains the same whenever it is given.

birth had been kept in a surrounding medium at about a temperature of 100° F., and that of the bath should be practically the same. Cheap bath-thermometers are everywhere to be had nowadays. An ancient traditional substitute was the elbow of the nurse's bared arm, which is more sensitive than her hand. After thorough soaping the child is immersed for a few moments in the bath at the temperature of from 98° to 100° F. It is sometimes convenient to do the preliminary lathering with the aid of a basin separate from the tub, but it is not necessary. As it is often necessary to spend quite a little time in cleaning out the folds and creases, it is better that only that part of the body which is being cleansed should be exposed at one time. In the immersion of the child a little dexterity is required to prevent the child's slipping from the hands. The usual manœuver is this: The child's head and shoulders are supported upon the nurse's left palm and wrist, the first and second fingers of that hand go into the farther armpit (*i. e.*, the baby's left), while the thumb steadies the shoulder. The nurse's right hand supports and grasps the lower part of the baby's thighs and knees. The child is raised from the lap and slid into the water, the left hand continuing to support the head above the water. The right may assist in the rinsing if necessary. The child is then lifted back into the lap and dried very carefully with a large, soft towel, which should envelop the baby during the process. If, as is usual, there be an admiring spectator of this first bath, she can assist by laying this towel upon the nurse's lap in advance. All the folds before mentioned must be dried most carefully. If it be well and thoroughly done, toilet-powder is not necessary, but it is admissible, and its use is preferable to the leaving of any dampness, the function of powder being only as a drier.

SPECIAL PRECAUTIONS

Two or three points should be especially mentioned in connection with the bath—namely, the cleansing of the scalp,

of the eyes, ears, nose, and mouth, and the care of the navel. The scalp differs from the rest of the surface only in that it demands more care in many cases to keep it clean. The eyes should be very carefully cleaned even before the bath, and nurses trained in hospitals often wash the eyes with a solution of boric acid as soon as the physician hands them the baby. In many lying-in hospitals it is customary to make a still stronger application, such as a solution of a salt of silver, to the eyes of the new-born as a preventive of infection from the mother's passages at the time of birth. This detail is not generally adopted as a routine in private practice. The ears should have especial care, owing to the many places where dirt may linger; and the nose should be carefully freed from discharges, which may subsequently prove irritating. The mouth must be cleansed, not only at this first bath, but, like the eyes, at every bath, with a separate bit of rag or absorbent cotton, either with pure cold water (preferably water which has been boiled) or with a solution of boric acid.

THE NAVEL-STRING

The piece of the umbilical cord, or navel-string, between the point where it was tied and the navel itself, separates naturally from the navel about the fifth day. During the intervening time the moisture from it soils the wrappings or garments, and may smell unpleasantly from decomposition. Various devices have been employed to combat this, from the traditional antiseptic of burned linen down. At the present time there seems to be no method more generally applicable or advantageous than to envelop the piece of cord, doubled upon itself if it be long enough, with a fair-sized wad of absorbent cotton, taking pains to cover smoothly all the cord. This absorbent cotton takes up the moisture as it exudes, and any disagreeable odor can be prevented by dusting the cord with a little boric acid or salicylic acid at the first dressing, and dusting the cotton at the daily bath if necessary. The whole is kept in place by the flannel band usually placed

around the child's abdomen. The cord is usually dressed upon the left side, the reason assigned being that thus pressure upon the large liver is avoided. When the cord falls off a small raw surface remains, which heals in a few days if simply kept dry. If slow in healing or inclined to be moist it may be dusted with a little bismuth powder, the subgallate being the preferable preparation. Some physicians prefer a mixture of starch powder and salicylic acid, which is likewise a drying and antiseptic preparation. Immersion baths are not repeated until after the cord has dropped off, daily sponge-baths of simple water being enough. After the separation the tub may be resumed if the child is of average strength. Besides the daily bath, sponging of the soiled parts is necessary whenever the napkins are changed.

IV

NURSERY ROUTINE

AFTER the monthly nurse leaves the mother's condition suddenly changes from that of one closely cared for to that of a caretaker. If she has had the good fortune to have one of those nurses who are not only competent to do their work well, but facile in teaching others, the beginning of the task will not be difficult. At all events, if the mother has been watchful and observant she should know pretty well what is to be done. Her chief cares will be not to carry her task too anxiously, and to do her work in such a way as shall not only meet the child's immediate needs, but train it into good habits. These needs are born with the child, its habits are to be acquired; and it is probable that during the nurse's incumbency most of the infant's functions have been regulated and many of its habits already formed. If these habits are good, the mother's task will be easy; if not, the correcting them will increase her burden. Habits are good when the needs of life are met in a regular and desirable way, and ordinarily they are as easily formed in the right direction as the wrong, if a little thought be taken and forethought used.

HOURS OF SLEEP

THE new infant's life is essentially one of eating and sleeping. In its earlier weeks, probably it is awake not more than two hours in the twenty-four, and this may still be the case when the nurse leaves. Three hours will certainly cover its waking time, which is divided into portions of from a

quarter of an hour to an hour, unless possibly its morning bath may keep it awake longer at that time of day.

The waking hours gradually increase, so that at six months they may amount to six or even more hours in the day. At a year, a long morning nap and a short one after noon are usual, besides an all-night's sleep. And the practice of a daily nap should be encouraged as long as possible. Some healthy children continue it until six or seven years of age, and some, equally healthy, are too active to take a day nap after three years. Now, the infant whose needs—warmth, food, and quiet—are supplied, will sleep, and nothing more is needed. Doubtless the habit of rocking or cuddling a child to sleep begins through tenderness, but it presently becomes a bondage; and many of the methods employed—thumb-sucking, sugar-teats, rubber nipples, etc.—are objectionable at the very least, and often injurious. The writer has known some children of ten or more years who still required some absurd device to induce sleep. When, therefore, the child has been dressed, bathed, or fed, according to whichever may at the time be due, it should be placed in a comfortable position in its bed and let alone. Obviously, it is better both for the parents and for the child, after a little time, that its sleeping and waking hours should correspond as far as practicable with those of adults. So the infant should not be allowed to sleep indefinitely and wake irregularly, but should be wakened regularly at the hours of feeding, and again put to rest through the day, and at night be allowed to sleep at a time so long as may be thought proper for its age, which is practically as long as it will sleep, or as the fullness of the mother's breast will permit. At night the intervals of waking are at first about twice as far apart as the day wakings. So that, assuming that when the nurse leaves the baby is suckled or fed every two and one half hours during the day, it will go five hours at night, which will give but one meal between the mother's bedtime and her time of rising. This night meal is usually too long continued. It is not necessary after the child is five, or at most six, months of age. The

child's sleeping hours are therefore largely conditioned by the times of feeding; and if the breast supply is adequate or the artificial food properly adjusted, the hours of sleep, if the child be in health, should take care of themselves. The regularity of habits regarding sleep has another advantage, which may be here mentioned, although its value is greater later than in infancy. Hours of rest, even without sleep, are exceedingly valuable to active children, and, above all, to those of excitable nervous system. If the sleeping times have been regular, and the child is accustomed to being put to bed without any of the artificial inducers of sleep before alluded to, it is easy to make it lie down and rest or amuse itself with some unexciting toy or book, if it be old enough, while without regular habits the attempt would be only a vexation to all concerned.

The amount of sleep needed will vary somewhat with children; yet in a general way it is true, as long since pointed out, that the child who sleeps well thrives—that is to say, its functions are well performed, its nutrition satisfactory, and its wear and tear easily repaired. As has been said, the infant sleeps about all the time, unless waking for a definite purpose, such as feeding or its toilet. A year-old child sleeps more than half the time. Up to three or four years, probably twelve hours in the twenty-four would not be much above the average, and until puberty it is well to try to give a child ten hours of sleep daily.

DISTURBED SLEEP

Disorders of sleep are not common in infancy, nor in childhood are they as frequent as in adult life. In infancy disturbances of sleep generally take the form of restlessness and sometimes of dreams. Usually some pain or distinct trouble or discomfort may be found as the cause, such as the uneasiness, direct or reflex, caused by dentition, by earaches, constipation, indigestion, or overfeeding, or the general disturbance accompanying any febrile condition.

After infancy disturbances are more common, and that one concerning which physicians are more consulted perhaps than any other—namely, night terrors—is most frequent, say, from three to six years of age. This affection is distressing to see. The child is usually found sitting or cowering, often shrieking, sometimes covered with the sweat of terror, and shrinking from some object of horror. This may be something definite, some person or beast, or some other thing of which it is in great dread. Quite as commonly the terror is of something which it cannot or does not indicate. The most distressing feature to the parent or nurse is that the child very likely does not recognize it, and refuses the proffered comfort. As complete consciousness returns, recognition returns with it and the reassurances are accepted, and before long the child goes into a sound sleep of weariness. The attack is rarely repeated the same night, nor is it usual that they come in successive nights. Ordinarily there is quite an interval.

The causes of such attacks are often quite clearly recognized, sometimes, however, not at all. In the first place, the children who are subject to them are usually—not always—delicate, feeble, or nervous. Again, more often than not, some physical irritation, especially of the digestive organs, may be recognized; or there is the story of alarming occurrences in the daytime, or exciting or injudicious story-telling before the child is put to bed. Any error of physical or mental hygiene may be the exciting cause. Nevertheless cases do occur in which no causation can be certainly found.

A few of these cases prove to be nocturnal epilepsy, and a few others to be manifestations of cerebral troubles of one sort or another. As a rule, however, the peculiarity passes away either by the diminution of the peculiar susceptibility or the removal of the exciting causes.

It will be noticed that the condition known in adults as nightmare and rarely seen in children, lies between the common dreams and this more distressing malady. Also akin

to it are sleep-walking and similar manifestations of activity during sleep.

As to cure, the efforts of the parent, with medical assistance if necessary, must be directed to the strengthening and improving of the general condition of the child and the removing and preventing of all recognizable sources of irritation.

SUCKLING

The question of artificial feeding is such a wide one that it will be deferred for consideration by itself. But the matter of suckling may be here spoken of.

During the first month of the child's life it should be suckled every two hours, counting from the beginning of one nursing to the beginning of the next. During the second and third months the interval should be two and one half hours, and after three months have been reached three hours. Nothing is gained by more frequent suckling, and a good many harmful consequences may result. It is not meant that every child requires just the same amount of food or frequency of meals. But in every case regularity is of the first importance. Further, if an infant in ordinarily good condition is not content and properly nourished when nursed as above, there is reason to suspect that the food itself is deficient either in quantity or quality. More frequent putting of the child to the breast is not likely to increase the one or improve the other.

The evidences of suitable and abundant breast milk are a fairly prompt completion of the nursing, followed directly by a good sleep lasting nearly or quite until the next nursing time, a contented condition when awake, regularity of the bowels, and a satisfactory and progressive gain in weight. The contrary of these—namely, prolonged sucking without evident satisfaction, broken or short sleep, fretfulness, bowel disorders of various sorts, and insufficient gain and, in the later months of the ordinary period of suckling, a delay of the usual signs of development (see chapter on "Growth and

Development'')—are to be counted as probable evidence of defective quality or quantity of the breast milk. Whenever such symptoms occur, the question of artificial feeding, wholly or supplementary to the breast, arises.

CRYING

A WORD here is proper regarding *crying*. While the underfed child does cry, is usually fretful and peevish, it does not follow that every cry is a call for food. Many times the little creature, who has "no language but a cry," is thirsty, and a teaspoonful of water will be the best satisfaction. Very often, indeed, the cry is the expression of overfeeding and internal discomfort, although this is far less frequent with suckled than with bottle-fed infants. In the latter, also, wakefulness or restlessness is frequently an evidence of overfeeding.

The observant mother may soon learn quite a little from the baby's cry. She will distinguish the "worrying" cry of discomfort, sleepiness, or fatigue, the loud outcry with squirming or drawing of the lower limbs, which is indicative of abdominal pain of some sort—colic, perhaps, or discomfort in the urinary passages. Later, also, the explosive cry of fright or anger. The various sick cries may be distinguished, but are often deceptive. Thus, crying after coughing is usually interpreted as meaning thoracic sensitiveness, while the child with pneumonia generally saves his breath and can rarely spare it for outcries. But there are exceptions. The hoarse cry of croup can only be referred to the right place—the larynx.

UNSUCCESSFUL SUCKLING

RETURNING to the matter of suckling, the following is to be noted: If there be a doubt about the need of supplementary food, the painstaking physician will be the best adviser. He will often easily point out errors in the maternal hygiene or

in the infant's regimen which have, not unnaturally, escaped the mother's notice. One of the commonest errors noted in the stress of modern life is this: The function of suckling is a natural one, and as such is not exhausting. But in order that any natural function be properly performed, the life must be a natural one. Whenever the so-called "social duties" take precedence, in fact or in desire, of the maternal ones the nutrition of the infant is threatened. It is true that many children are unwelcome guests, and the usual restraints which pregnancy puts upon social activity are ungraciously borne. In such cases, though the further restraints entailed by suckling are very likely resented, the nursing, if performed at all, is done under such conditions as to make it of doubtful value. But we often see women who have gladly become mothers, and who desire to do their duty to their children, undertake suckling under circumstances sure to entail failure. How often do we see a mother successfully suckle the little one until she begins to take up her former social life. When the baby's afternoon nursing is hurried, in order that the mother may pour tea at Mrs. Blank's, which she does under a worrying consciousness that the baby's next meal will be overdue before she gets home, the nursing-bottle and its accompaniments are not far off.

But the most devoted mother, in otherwise good health, may be defeated in her attempts to suckle her babe by some apparently slight matter. One of the commonest is tender, irritated, or cracked nipples. Sometimes the pain of each nursing is such as to draw tears to the mother's eyes or to make her faint, and the frequent repetition of the suffering may so exhaust her that the breast milk is no longer sufficient. In the chapter on "The Preparation for Motherhood" some suggestions regarding the care of the nipple were made, and the same are still of value after delivery.

After each suckling the nipple should be washed with warm water, and afterward with a boric-acid solution if there is any irritation. Then it should be most carefully dried. These precautions are preventive, and to be used

even in a perfectly healthy state of the nipples. As the nipple and the baby's mouth are so intimately in contact, and affections of one may spread to the other, the latter should also be cleansed in the same manner after each suckling. If the nipples be very tender it is wise to protect them at the time of suckling with the well-known nipple shield, which is essentially a glass dome covering the nipple and the neighboring part of the breast so that the tender parts are not irritated by the contact of the baby's mouth, while a rubber nipple at the summit permits the sucking to be done. For actual cracks of the nipples, various applications are made. Of these, some previously mentioned may be employed. In severe or obstinate cases it is better to consult the physician, who will make more efficient ones. But the treatment of a cracked nipple which has been well established is tedious and often results in the abandonment of the use of that breast.

THE MOTHER'S DIET

The diet of the nursing mother should be ample and digestible. But it should be varied. While it is probably true that some kinds of food may affect the taste of the mother's milk, this fact should not be allowed to limit her choice too much. On the other hand, she should not fall into the error of overfeeding. The amount of proteids in the diet governs largely the amount of the same and of fat in the milk, and an unusually rich dietary may do harm as well as an unusually poor one. Beside the usual varied table diet, adjusted to the digestive peculiarities of the individual, milk may be used as a ready method of obtaining all those elements which are to be reproduced in the mother's milk. It may be taken between meals and at bedtime most advantageously, and it should be kept in mind that it is a food, not a simple beverage. The writer has never been able to see that any real gain came from the use of beer or alcoholic beverages, except occasionally to increase the appetite. Some good observers, however, hold a different opinion.

Among the conditions affecting the composition of the

mother's milk may be mentioned emotional disturbances and menstruation. Emotional women do not make the best nurses, and it is a matter of common observation that strong emotions, probably anger most of all, are likely to be followed by disturbances in the child. A wilful or unrestrained woman should never be employed as a wet-nurse, and it is doubtful whether a mother of such temperament is preferable to bottle-feeding. It would not be even advisable if it were certain that such a mother would be any more careful of the food than of her temper.

The effect of menstruation upon the quality of the milk is sometimes marked, but experience differs as to the frequency with which this effect is noticeable. The writer's experience is that the effect is generally not great, except when the menstruation begins at a time rather late in the nursing period, in which case it is rather a signal that the activity of the breasts is becoming subordinate than a disturber of the condition of the child. It is then a hint that supplementary feeding is called for. When menstruation occurs early in lactation the baby's condition, especially as regards the bowels, should be watched. The child probably need not be taken from the breast, or if so only for a few days.

BATHING

The directions as to the bath routine, given on page 27, will hold good for a child of average strength until it is about six months old, when the temperature may be dropped a few degrees and thereafter a degree or two from time to time, so that a child of good physique a year old will probably react well from a dip into a bath as low as 90° F. But the blunder of "hardening" by too rapid change should not be committed. As children increase in age the bath may be changed in character, rather than in temperature—that is to say, a young child cannot well bear immersion, at least for more than a few seconds, in water much below 90° F. The surface of a little child's body is very large in proportion to

its mass if compared with that of an adult. This fact and the susceptibility of its nervous system doubtless account for the ease with which a child is depressed. On the other hand, the stimulating effect of a slight, cool sponging upon a healthy child is undoubted. Hence it has been a standard practice to let the child stand ankle-deep in warm or tepid water while it is quickly sponged over with water of, say, 70° F., or even cooler in some cases. But it should be borne in mind that for feeble children or for those not evidently feeble who do not react well from any chill or cool bathing great care in this direction is to be exercised. When borne well, the cold sponging alluded to is especially useful about the throat, neck, breast, and shoulders as a safeguard against the common tendency to "take cold."

Although the question of sea bathing is not one that concerns infancy, it may as well be mentioned in connection with bathing in general. Bathing in salt water may begin at about three years of age, provided the water be warm and quiet. Under no circumstances should a child be taken into the water or be romped with there in any way likely to alarm it. The beginning may be made on a warm day, the child being allowed to play alone in the shallow water or being carried in the arms of an adult. This "paddling," however, must be watched, because it is harmless only so long as the child is kept warm by activity. Any dawdling with the feet in the relatively cool sea-water is not permissible for a small child. Gradually, as strength and courage increase, the child may venture farther and remain in longer, and essays at swimming be made. Real sea bathing—that is, bathing in the open ocean or in the surf—is not a child's play at all. The shock is very considerable even in quiet weather, and only older, adolescent children should be allowed to indulge in it, except under the careful supervision of an adult. The test of suitability in sea bathing, as in any cold bathing, is the promptness and completeness of the reaction. If there is any chilliness remaining after the rub down, the bathing is probably harmful.

V

BABY'S AIRING AND EXERCISE

A NEW infant cannot be said to need exercise in the ordinary sense. Its rapid growth and development demand the abundance of food it ingests. There is no need for muscular activity, as would be the case with an adult, or even with an older child eating anything like such a proportion of its own weight daily. Fresh air, however, is advantageous to the infant, provided it can be had without exposure. In warm weather the child may be taken out of doors, in places sheltered from wind or too strong sun, very early in its life. In cold weather this going out must be postponed in proportion to the lowness of the temperature and the feebleness of the child. When first taken out, especially in cool weather, the child should be carried in arms. It needs the warmth of the attendant's person, the support of her arms, and it is safer from jolts than it would be in a baby-carriage. In thus carrying a child it should never be forgotten that it is taken out for its benefit, not for admiration. Its long garments and wraps should be kept closely about it, and the habit, less frequently seen than formerly, of supporting the infant in such a way that one hand or arm is within its wraps, permitting the latter to fall gracefully and display its embroidery, need only be recalled to be reprobated.

THE BABY-CARRIAGE

WHEN a child is taken out in its carriage its protection should be in accordance with the demands of the temperature. If this be low, an abundance of light, warm wraps,

with a foot-warmer of some description within, will be called for. The carriage for infants itself requires a hood or chaise-top for protection both from sun and wind. It may be doubted if a day so damp or so windy as to call for a veil is a suitable day for the infant to be abroad. On such days probably greater advantage is gained from the placing of the carriage, with the child, in a sunny, well-aired, and unwarmed room than in taking it out of doors at all. And this hint will serve for older children, especially in cities, where, if they go out, they must walk near gutters in drafty streets. The whole question is not of outdoors or indoors, but, Where can the most sunshine and sweet air be had?

The carriage should have easy springs, so that the child is not harshly jolted by inequalities of the surface. It should have a comfortable mattress, and a pillow suitable to the size of the child, supporting its head without bowing the shoulders. It should have a strap or some contrivance to prevent an active infant from throwing itself out of the vehicle or being thrown out by any accident. In wheeling a baby-carriage attention should be given to its course, as a small stone is a serious obstacle to so small a vehicle, and a curb-stone becomes a precipice. The eyes of the little one should not be exposed to the strong sun while it lies upon its back. The hood can be so tilted as to shade the face, while the sun-warmed air permeates the whole vehicle.

EXERCISE FOR OLDER CHILDREN

As the infant becomes stronger it takes its exercise by kicking, learning the use of its hands and members, later by sitting up, then by creeping, learning to stand, to balance, and later to walk. Sitting alone probably will come at about six months of age; walking alone at from twelve to fifteen months. Unless the child is exceptionally dull in mind, do not urge it to make advances. As it feels its power it will try all these new acquirements and make gains more or less rapidly, according to its ability and natural gifts. Like-

wise, be always gentle in playing with a baby. Hard trotting, tossing, and other horse-play is undesirable and injudicious.

Exercise for its own sake is the result of a high artificializing of life. Wild animals get enough of exercise in the search for food. Man, either in the wild or civilized state, so long as his occupation is one of physical exertion, usually gets enough, and at most needs some change of occupation or exertion when his usual one is too highly specialized as to the muscles employed. So with children in any surrounding where the natural admixture of outdoor play and of assisting in family cares and duties according to the strength of each exists.

When, however, a child is so situated in life that everything is done for it except the chewing of its own food; when outdoor life is restricted to a joyless walk with a nurse, and much of its time must be spent in the schoolroom, the watchful parent is obliged to invent or seek out forms of exercise. For the country child, walking, climbing, rowing, fishing, hunting, and the numberless games of summer-time; skating and coasting and the like in winter, are enough. For the town child some of these are still available. But as the city is transformed into the great city, the distance from the home to the place of play or exercise becomes greater and greater, and all the available time is given to the going and coming. Hence the growing need of parks, not only as places of display, but of exercise and recreation; the call for gymnasia for the older children, calisthenic classes for the younger, where the advantages of the exercise *per se* are much increased by the learning to do things systematically and in coöperation. These are especially desirable for the feeble child, who lacks the impulse, and for the phlegmatic or indolent child who shrinks from exertion. The gymnasium, of course, presupposes a judicious teacher who will guide, stimulate, or check as each child needs. If no gymnasium be available, the parent should choose the exercise as far as practicable, not from the fads of the moment, but

with regard to the needs of the child and its strength, age, and development, and should see that no amusements be indulged in which are harmful bodily or mentally, and, as adolescence is reached, try to prevent overdoing in competitive games. It hardly need be said at the present day that up to puberty a girl should have the same freedom of exercise as a boy, and at and after puberty she need be restrained only as special occasion occurs, although she should no longer put her strength against that of the adolescent boy.

VI

DRESS AND CLOTHING

THE first clothing for a child is, of course, prepared in advance of its birth, and might have been considered in connection with the preparations for maternity. It seems preferable, however, to make it a part of the general treatment of the subject of dress.

While dress varies very much in different countries, certain peculiarities are so uniform in all as to merit consideration as general principles, although the applications must accord with the demands of climate and external conditions of all sorts. These general principles are, first, that the protection against cold must be adequate to conserve heat within the limits of the person's producing power. In hot climates, of course, this conservation is hardly called for, and protection from the sun and the demands of decency are the essential factors. Second, that the protection shall be as nearly uniform over the person as practicable, some extra safeguarding being generally given to the cavities of the trunk. Lastly, that the clothing shall be as unrestraining as to the motions and the functions of the body and as little burdensome as possible. Still further may be added the subordinate qualifications of unirritating surface and esthetic appearance.

These requirements have been put in the order of importance as they apply to infants' clothing. It is to be regretted that the order is often reversed in practice. The requirements of protection and want of burdensomeness are best met by garments of soft, porous texture, as such are

poorer conductors of heat than others and best conserve the body warmth, while they are permeable to the body's exhalations. The universal experience, where choice exists, is that garments of wool have the desired combination of these qualities in the highest degree. If there is no unusual sensitiveness of the infant's skin, that garment, at least, which is next the skin should be of a soft woolen fabric of such texture that it is freely elastic and unirritating to the skin. Machine- or hand-knitted fabrics perhaps most perfectly fulfil the requirement. For sensitive skins or in those climates where woolen garments are unsuitable, soft cotton fabrics, or knitted silks if the purse permits, must be used instead. It may be well to know that the element of non-conducting power may be gained, even in fabrics not otherwise the best, by increasing the number of layers. Thus two or three thin undershirts, one over the other, are often better protection than one shirt as heavy as their united weight and of the same weave.

The greatest objection to fabrics of all wool is the remarkable shrinkage which occurs in washing by any but the most expert hands. Properly washed, they may last a long time; but the writer has frequently seen loose, all-wool outing shirts shrunken by a laundry beyond the possibility of wearing in three washings. This has led to a great variety of devices, the ordinary one being to mix enough cotton with the wool so that it will not shrink inordinately, while preserving a large part of its warmth. Such goods are generally called merino, the proportion of cotton varying greatly. Another combination was that in which a wool face or pile was incorporated with a cotton-web backing, the former giving warmth, while the latter resisted the shrinkage.

THE PRINCIPAL REQUIREMENTS IN DRESS

All infant garments should be very free and loose-fitting, no constricting bands or parts being permitted anywhere.

In detail, the garments are usually the following:

First a girdle, called the binder or band, the first use of which is to retain the dressings of the cord and to protect the unhealed umbilicus from injury. After the healing of the navel it is of doubtful benefit, since its name seems to suggest to the nurse or mother that it ought to bind, or be tight, which it should never do. There was a notion, which may still survive, that a tight bandage would prevent rupture. This was a blunder. It did not prevent abdominal or navel hernia, and by increasing the strain lower down it favored groin hernia. If, however, it be remembered that the band is simply for warmth and not for support, and that it should be loose, it may be advantageous. Unless it be made with shoulder-straps or some appliance to keep it in place, it is likely to slide about unless too tightly pinned. The writer, therefore, prefers a shirt. If the band be used, it should be of flannel or knitted, and should reach from the breast to the napkin. But the shirt has all its advantages, and is not likely to be too tight. In fact, many so-called binders, with shoulder-straps and a pinning-tab for fastening to the napkins, are really only sleeveless shirts.

THE NAPKINS

The other garment going next to the skin is the napkin. It is rather a misnomer to call it a garment, as, while it is a covering and a protection, it would probably never be used save to protect the other garments from being soiled by the urine and evacuations from the bowels. But its contact with the skin requires that it be treated as a garment. The best material for napkins, or at least for inner napkins, is old linen of heavy weight, old table-linen cut up being the most desirable. But as the supply of this, unless one can buy it from a hotel, is very inadequate, most of the supply must be bought; and at the present time we think the material known as cotton bird's-eye is generally preferred, most new linen being too stiff for the purpose. It may, however, be used at first for outer napkins, and as these soften

by repeated washings they may be used as inner napkins. Cheese-cloth of rather close weave may be used, and is sometimes cheaper than the washing of other fabrics, the cheese-cloth being used but once. This material is especially applicable for the inner napkins. The napkins must be so large that a diagonal of the square will reach around the infant's hips and pin easily. They are sometimes made square, sometimes twice as long as wide, and are folded once to make a square. When applied the square is folded diagonally, which will make four thicknesses. The diagonal edge is put about the infant's waist, and the other angle of the triangle is brought up between the thighs to meet the other ends. When an inner napkin is used, the outer napkin does not really need to be two squares long, two thicknesses, when the napkin is folded on the diagonal, being bulky enough. Whatever shape is used, the napkin is to be hemmed. The size is usually half a yard on a side for new babies, and larger as the baby grows. If the double-length napkin be used, it is, of course, a yard long at first, and later double the increased width is called for. The inner napkin is sometimes simply another napkin like the first. Preferably it is one of soft material, about two feet square, which is folded once each way, making a square of four thicknesses about one foot on each side. This is laid over the larger triangle, one corner corresponding with the lower angle of the outer napkin in such a manner that the smaller one will cover the buttocks and genitals. The smaller napkin gives all necessary protection against wetting, and is retained by the larger triangle.

The care of napkins deserves a word, and really but a word, which is that a napkin should be changed as soon as it is known to be wet, and should not be used again, however little it has been wet, unless it has been rinsed out in clean water. Of course, soiled napkins must be thoroughly washed. Objection is often made to this simple rule that it gives too much trouble; that napkins merely wet may be simply dried, and used again without harm. The answer is

that there is no easy road to success in child-rearing any more than in anything else. If a mother is so burdened with cares and duties that the rule cannot be complied with, she must keep the rule in mind and do her best. As to the using again of unwashed napkins and their doing no harm, it may be admitted that some skins do not seem to be irritated immediately by the practice; but this is not proof that it is harmless, and in any case such a procedure is contrary to all notions of propriety.

One thing should be mentioned only for condemnation—the india-rubber diaper, or one of any water-proof material. It is hard to imagine how any one could have devised the plan of poulticing an infant's skin with its own fermenting excretions. They are always foul-smelling things, and sometimes produce grave excoriations or ulceration of the skin. If any emergency, like traveling, demands unusual protection from moisture, it should be met by an unusual amount of absorbent material, such as extra napkins or absorbent cotton, which may be thrown away, rather than any impervious covering to confine the urine about the child.

The consideration of napkins calls for mention of their discontinuance. Of course, infants must be protected until they can be taught to give notice of their wants or to relieve themselves with sufficient regularity to prevent the danger of untimely wettings or soilings. Just at what age this can be done cannot be said, as it varies. Disregarding cases in which the child has abnormal inability to control the flow of urine, as in many cases of bed-wetting, it is probable that most children wear napkins longer than is really necessary. In fact, our English cousins believe that the American child is allowed to depend upon them much longer than do their babies. They claim, moreover, that while the infant is still but a few months old it can, by the regular holding it over a small nursery vessel, associate in its mind the presence of the vessel with the act of emptying its bladder or its bowels. The plan is certainly worth trying in all cases, since if it fails nothing is lost, and if successful the child and its atten-

dants are relieved from what it is not too much, in many cases at least, to call the bondage of the napkin, as well as from the various irritations and annoyances which arise from their unduly prolonged use.

SOCKS

THE one article of apparel which the new baby is sure to find itself abundantly provided with in advance is socks, generally in great variety of color, pattern, and material. They are unobjectionable if big enough, but are really of little use, if indeed of any, while the long clothes are worn, and are not comparable for protection to warm stockings after the clothes are shortened. While long clothes are worn it is just as well to let the infant have the unrestrained freedom of its feet and its fascinating pink toes.

This is in no wise to be construed as indorsing the exposure of the feet or limbs. If the "hardening" is ever mentioned it should be for condemnation. The feet are to be always kept warm, but the free wrapping of the flannel petticoat or the more complete protection of the stocking seems better. Whether or not the feet need covering during toilet depends upon the warmth of the apartment. In a general way we should say that an infant should never be washed or dressed or changed in a room at so low a temperature as could make the feet cold. But if the climate or the construction of the house is such that it becomes cold at night, a pair of extra wide and loose stockings which can be slipped on the baby with ease, much as the mother puts on her "bedroom slippers," will be found convenient when the necessary changings must be done.

These three articles—the band or shirt, the napkin, and the stocking, if used—constitute the immediate body raiment. Outside of this a variety of apparel within rather narrow limits may be used. The principle of uniform protection and freedom of motion should apply to whatever is selected.

OLD-FASHIONED CLOTHING

THE traditional baby clothes, with the "pinning blanket" or "barry coat," its petticoats with waists, and its dress, last of all, had really only this to recommend them from a hygienic point of view: they protected the infant from cold. Tradition only kept and still keeps them in use. The waists had to be made to fold over, as they could not be made to fit a chest at first of unknown and then of constantly changing dimensions. They had to be pinned or sewed to be kept in place, and the result was a tight binder about the thorax, which is at least as objectionable as one about the abdomen. Besides the harm of this compression of the ribs, the inelastic waists are uncomfortable, and the putting on of the suit, with its constant rolling of the infant from breast to back, reminds a masculine bystander of nothing so much as the stropping of a razor. And at the end of the performance the infant's patience is usually quite exhausted, and it shows it.

THE "GERTRUDE" SUIT

FORTUNATELY, better styles of dressing can be had.

Starting with the shirt or *loose* binder and the napkin, which make the indispensable body protection, and the stockings (if used), one good warm layer, such as is gotten from a flannel garment reaching from neck to eight or ten inches below the infant's feet—a slip, in other words—would constitute in most climates all the protection, beyond shawls and cradle wraps, that the physical needs of the child demand. But it is convenient to have further protections, so that, as it gains power of movement, it may not displace its covering and may still be warm enough. It is also convenient to have an easily changed covering to keep the warm garment clean; and, above all, the mother's taste demands something which shall make the infant an attractive object, if not a thing of beauty, to others as well as to herself.

One of the first suits to attract attention, which was made

in accordance with hygienic needs, was the "Gertrude" suit, devised by Dr. L. C. Grosvenor, of Chicago, and named after his infant daughter, for whose comfort it was originally devised. Its convenience was so manifest that the demands for patterns obliged Dr. Grosvenor to make them public. In 1886 his articles were republished in "Babyhood," and the suit recommended as the best then within the knowledge of the present writer. As there described the suit consisted of

1. *The Dress*, which, being external, could be of any pattern to suit the taste, but the recommended one was a plain slip.

2. *The Undershirt and Nightgown.*—These were alike. "The best material," wrote Dr. Grosvenor, "is Canton flannel of medium weight. The hem of the neck, wrist, and bottom is turned over on the *outside* and catstitched, so that there shall be nothing rough on the inside. Hems are concealed by a simple trimming. The nightgown and diaper are all that are needed for night wear."

3. *The Flannel Shirt.*—"Made of woolen flannel, without sleeves, the armholes and neck being scalloped, but not bound. May be as ornamental about the bottom as desired."

4. *The Diapers.*—"Cotton flannel is recommended, as being softer, warmer, and more absorbent than linen or any other material. The hem is turned over on the right side and run through the machine. Use the fleecy side next to the baby."

Concerning the suit in general, Dr. Grosvenor wrote: "The undergarment should be made of nice, fleecy goods—Canton flannel is the best we have at present—cut princess, reaching from the neck to ten inches (twenty-five inches long) below the feet, with sleeves to the wrists, and having all the seams smooth and the hems at neck, wrist, and bottom upon the outside—the latter turned over once and felled or catstitched with colored worsted—a tie and a button behind. Here you have a complete, fleece-lined garment, comfortable and healthy, and one that can be washed

without shrinking. The next garment is made of baby-flannel (woolen), also cut princess, same pattern, only one-half inch larger, reaching from the neck to twelve or fourteen inches below the feet—to cover the other—with generous armholes pinked or scalloped, but not bound, with two buttons behind at the neck, and may be embroidered at pleasure. The dress cut princess to match the other garments is preferable.

"The ordinary baby dresses are all right, except that I would have them only from thirty inches to a yard in length.

"Now, these three garments are together before dressing—sleeve within sleeve—and then are put over the little one's head at once and buttoned behind, and the baby is dressed, there being but *one* pin—a diaper-pin—in baby's dress instead of *fifteen*.

"At night the dress should be simply a Canton flannel night-dress and a diaper—the dress being not unlike the undergarment in the suit, only a little longer. It is absurd to think that a child can rest sweetly in a diaper, a bandage, a pinning blanket, a shirt, and a double-gown, as many a child is expected to do."

The claims made for this method of dressing were: perfect freedom to all thoracic, abdominal, and pelvic organs; the clothing hung from the shoulders; the greatest saving of the time and strength of the mother in caring for the babe; resulting health and comfort to the child; the evenness of the covering of the body, there being the same covering over the shoulders as elsewhere.

As a whole, the suit was very satisfactory, its greatest merits being its freedom and the facility with which it could be put on, giving very little inconvenience to the child. Two general objections, however, were soon made to the suit. The first was that the inner garment did not cling closely enough to the body for many active children, there being no binder to protect the abdomen. The second was that a better material than Canton flannel could be found for the

inner garment, since the downy cotton does not long remain downy unless it be washed by very skilful hands. Both of these objections seem well founded, and in an ordinarily cool climate we prefer that the inner slip be replaced by a knitted shirt with sleeves, long enough to reach the diaper, to which it may be pinned. The inner slip, therefore, will be done away with, and the wool flannel middle garment comes next to the shirt. In this way both objections are met by one change.

Various other materials have been substituted. The best, aside from the traditional "baby-flannel," are web-knitted stuffs, which are very elastic and pliable. These were used in various suits made after the Gertrude pattern. These have been found very convenient and acceptable, and the inner garment may be easily made snug-fitting without being tight, if it is preferred to continue the original Gertrude pattern rather than to change to a shirt.

NIGHT DRESS

Whatever style of dress is adopted, the night attire consists, besides the diaper, of one woolen garment, the shirt or its equivalent in the Gertrude suit. A muslin nightgown is often put over this, but if the inner garment of woolen be long, no other is needed.

Various devices are used to keep the feet of the infant, after it becomes active, covered by the nightgown. The draw-string is convenient for the mother and secure, but it is rather restrictive of the motions of the child's feet. Buttons and buttonholes across the entire bottom give greater freedom. Good safety-pins also do very well. If the nightgown be kept down, no stockings are needed in bed. In fact, if the bed-covers are warm and secure, without being tight, no particular care need be paid to the lower extremities while the infant is in bed. The bed-clothing is best secured by tapes or safety-pins, extra large sizes of the latter being made for this purpose.

SHOES

So long as long clothes are worn no shoes are called for; the child is usually better without them. When the child begins to get its feet out—when it is short-coated, in other words—shoes of some sort are desirable, especially as the child gets upon the floor. The procuring of good shoes—that is to say, properly shaped ones—for a young child is not easy. The ignorance or indifference of manufacturers regarding the shape of an infant's foot is remarkable. Perhaps it is less so now than a few years ago, when the writer, looking for shoes of the shape of a baby's foot, was confidently assured by the shopman that "there is no shape to a baby's foot," probably meaning none that he could not distort. The accompanying cut is an imprint from the foot of a new-born infant. The peculiarity which strikes one is its breadth and the inward turning of the inner side. It will be immediately noticed that the axis of the foot is not drawn down the middle of the foot, but from the center of the heel through the center of the ball of the great toe and the center of the end of that toe. This is not arbitrary, but the line is that upon which an undistorted foot runs in its tire-like movement in walking. It is immediately under the strongest part of the arch of the foot. In natural walking these axis lines of the two feet are nearly parallel. If, now, the toe be turned outward—that is, from the center line of the body—ever so little, the axis of the toe is no longer con-

The dotted line shows the inner border of the foot, which does not touch the floor in standing.

tinuous with that of the foot, and the motion begins to lose in smoothness and grace. If it be much turned out, as in feet long used to pointed shoes, the gait is, to the trained eye at least, little better than a limp, and is almost the same as after the loss of the great toe. The foot is distorted easily in proportion to the youth of the person, and misfitting shoes in infancy and childhood usually produce deformities not entirely remediable in after years even by the greatest care. It must be noted also that stockings are nearly or quite as destructive of shapeliness of the feet as shoes, and the writer has watched the distortion of feet of adults, carefully looked after in previous years, by the pointed-toed hosiery sold in shops of late years, although the patient had all the time been most careful as to the shape of his or her shoes.

FASHION IN DRESS

As the child grows older the dress changes somewhat, but for several years the change is not very radical. After napkins are laid aside, drawers take their place. Young children of both sexes are dressed much alike, and we venture to express disapproval of the tendency of fashion in recent years to put little boys of two or three years into awkward breeches, trousers, or even stiff leather leggings reaching nearly to the hips, the child's convenience and freedom of motion being sacrificed to the parents' notion of "style." If it be desired for any reason to discard skirts, the knitted materials, which are very elastic, or garments of the same, machine-knitted, can be obtained with little difficulty in most places.

Fashion and convenience of purchasing probably will always govern the details of children's clothing. But whatever these may be, the principles already mentioned should be kept in mind—namely, adequate protection without burdensomeness, uniformity of protection, absence of all restraint of motion, especially such as is caused by girdling or binding. These should be kept in mind not only in child-

hood, but through adolescence. To no one is this freedom more necessary than to developing girls; neglect of it may entail mischief of long duration. Further, it must be added that the garments, while free, must be of comfortable fit. A garment, for instance, which is badly cut in the neck or slips about upon the shoulders may annoy the wearer as much as, even if less harmful than, too tight a one, and these discomforts may, in a child disposed thereto, excite muscular twitchings or similar disarrangements. Similar discomforts arise from unnecessary multiplication of garments, especially if numerous bands, belts, or folds are involved. This objection bars out many contrivances, seemingly useful, such as diaper supporters, various subdivisions of undergarments, etc., in which more pins are required, while the covering is less uniform.

STOCKING SUPPORTERS AND DRAWERS

The rule which forbids girdling or confining of any part will exclude the use of tight garters. On the whole, the stocking supporter which connects with the waist, or whatever equivalent garment be worn, has fewer objections than the circular garter, and it is therefore to be preferred.

The night apparel of infants has been mentioned. Until after napkins are abandoned it requires little change. Of the various methods of keeping the bottom of the night-gown in place, buttoning is preferable to the draw-string, unless the garment be so long that the narrowing by the drawing up does not extend high enough to confine the feet or bring them in contact with the puckers. For a child two years old or upward the one-piece garment known as "night-drawers," with or without feet, is generally popular. By it the child is completely covered by one thickness in any case, however restless it may be. Flannel or Canton flannel is the commonly used material, the latter probably the more used. It has the advantage of not shrinking much, but in other respects is not so desirable as wool flannels.

The seams are better turned outward, as they are rather clumsy if turned inward.

GARMENTS FOR OLDER CHILDREN

When a child begins to creep about the floor some garment is desirable, not only to protect its white clothing from dirt, but to protect it in some degree from the drafts usually prevalent there. Of such there are several patterns. One is not unlike a loose pair of the "bloomers" sometimes used by female bicyclists, fastening about the waist as well as below the knees. Another, affording more complete protection, is like a child's apron having sleeves, but with the bottom closed except for leg-holes or with short trouser-like extensions. Thirdly, little suits of denim overalls are often found in the shops where children's garments are sold.

The extra protection needed or desirable when the child goes out of doors will depend upon place and season. In the climate of the northern Middle States the child, while very young, should in cool weather be taken out only in an attendant's arms. An older child goes out in its baby-carriage. Besides its winter clothing it will need a warm cloak, a warm hood or close cap covering the ears, a veil if the weather be cold or windy, and warm, loose mittens fastened by safety-pins or buttons to the sleeves, not tied around the wrists.

Often a foot-warmer of some description is needed, and good warm carriage wraps. The exact weight or number of these cannot be given, because seasons and places differ not only in temperature, but in dampness, which makes a day more "searching" than another equally cold. A feeble child also needs special protection. The guarding against severe winds, the avoidance of gusty corners, would seem to need no mention did we not daily see the child's comfort sacrificed to the attendant's social instincts. If the parent cannot feel safe in this regard, the child is better off in a well-aired cold room, with its outdoor clothes on, than stand-

ing by the mouth of an open sewer or beside a foul gutter. All of this is in no wise intended as an advocacy of undue coddling or burdening of the child with needless garments and wraps. It is merely meant to suggest that the child's airing should not be a matter of bald routine, but the subject of a careful consideration of the facts and conditions in the particular case.

VII

GROWTH AND DEVELOPMENT

GROWTH and development present many aspects, but are the same essential process. To the casual observer the manifestation of most importance is increase in weight, and it is the first to be noticed. All growth and development, while continuous, is not strictly uniform in rate, and many developmental processes may almost be called paroxysmal, because the periods of preparation attract little attention, while the outward manifestations are sudden.

GAIN IN WEIGHT

LET us begin by considering the increase in weight. At the very first the child loses after birth, the loss corresponding with those days during which there is no milk secreted for its use. But it is probable that the loss is at most only partly due to the want of food, since it has occurred in children born in hospitals and from the first put to breasts in which the milk was established. The main source of loss is doubtless the emptying of the bowels of their accumulated secretions, as well as the passage of urine, without any food-supply to replace their weight. Doubtless tissue changes may contribute somewhat. Half a pound or more is lost on the average during the first few days, but the amount is made good very soon, so that the infant by ten, or at least fourteen, days will have reached a weight equal to that at birth. If this recuperation has not begun after the first three days the milk-supply would better be inquired into, and if it be

long delayed or is insufficient there is reason for supplementary feeding or weaning.

After the increase begins it goes forward—assuming an adequate and suitable supply of breast milk—very steadily and, at first, rapidly. A net gain of half a pound a week is not unusual for a few months, and at least a quarter of a pound is to be expected. Later the gain is less rapid, and if it be charted into a curve the latter resembles that of a body thrown into the air, its initial rise being the most rapid. This diminution in the rate of gain corresponds pretty well with the time of the beginning of the process of teething, and it may be that a part of the developmental energy is diverted into that channel.

Since the rates of growth are calculated from a mass of infants fed upon the breast it may be proper to mention at once certain ways in which artificially fed children may be expected to vary from these calculations. To begin with, a child is not usually put upon artificial food until it is evident that its natural supply has failed. In the meantime the infant has fallen behindhand, and has something to regain beyond the normal. Some more time may be lost in adjusting its food to its needs and digestive capabilities, so that altogether the little one makes a bad start. But after the food is properly adjusted, and the digestive organs have developed in ability, the gain usually overtakes the rate established for sucklings after some months. This assumes, of course, a well adjusted and ample nutriment. We find that with artificially fed infants, as seen in dispensary practice, for instance, where the feeding has been more or less haphazard, developmental processes, such as teething, are retarded, and that these children get their teeth on an average some time (perhaps a couple of months) later than suckled children.

Assuming, then, a child upon good breast milk or upon a properly arranged food, it is expected that, if of average weight at birth, it will have doubled its weight by the time it reaches the age of five months, and have trebled its weight by the end of its first year. For instance, a child whose

initial weight had been seven pounds might be expected to reach fourteen pounds in five months and twenty-one in twelve months, gaining about as much in the first five months as in the next seven. But it is to be remembered that this is an average and applied to average children. It may be that a child under weight at birth may reach the average by five or six months, and very likely will do so at the end of the year, while one who expects a ten-pound baby to weigh twenty and thirty pounds at these periods is likely to be greatly disappointed. It will be at once noted that the seven-pound child, who reached the figures first given, has made an average weekly gain of one third of a pound in the five months, and of a scant quarter of a pound in the next seven. In experience the ten-pound baby rarely shows any greater capacity for gaining than the average baby. So the tendency is toward the average, and a five-months' child in good condition usually will weigh between twelve and sixteen pounds, and a yearling eighteen to twenty-five, about twenty being a good net weight if a large number of children are weighed.

In weighing children a certain time of day should be taken, so that the fullness of the stomach and of the intestines shall be, as nearly as practicable, the same.

During the second year the gain is about six pounds. In the subsequent years the rate of gain declines somewhat, as a rule, so that at seven years the weight, even with ordinary indoor clothing (school clothes), is less than fifty (not much, however, and in some places not at all), or about forty-five pounds net. Then the increase is rather faster, and at eleven girls weigh, clothed, seventy pounds, and boys rather more. Then the girls gain very rapidly, outstripping the boys, and this superiority is maintained for two or three years on the average, so that at fourteen both are close to one hundred pounds, the girl still in the advance. Thereafter the boy passes the girl, and at sixteen he averages from one hundred and twenty to one hundred and twenty-five pounds, and she about ten pounds less.

GAIN IN HEIGHT

COINCIDENTALLY with the increase in weight the height, or, as it is usually called with reference to an infant, the length, is increasing. The birth length, as does birth weight, seems to vary somewhat according to races, or at least according to countries, and even in different parts of our own country differences in the rate of growth of children are noted, which may be due more to racial than to topographical causes. But American statistics give the average length of newborn children, both sexes included, as about twenty and one half inches. The gain in the first year is very great, being about eight inches. In the second year it is usually less than half that, and in subsequent years still less—three or two inches—until the great impulse to growth, about the twelfth year in girls and the thirteenth in boys, carries them rapidly toward their adult stature. Up to this period the average weight and height of boys is a little more than that of girls, but as the development starts earlier with girls, during the twelfth and thirteenth years the latter pass the former in both particulars, and their greater weight continues even through the fourteenth year. It is to be remembered that these are averages of averages, because in one city the girl is found to be the taller only for one year, in another for five years, her superiority in this respect beginning earlier and continuing later than in other places. These variations are interesting to the general reader only as a knowledge of them may prevent undue anxiety in case the parent finds her child differing much from any table of averages she may happen to possess. It should be borne in mind that family peculiarities have great influence upon individual cases, especially as regards height.

Under all these circumstances, tables for popular use are of doubtful value, since those not in the habit of using them are apt to consider that they have an authority as great as tables of interest or of logarithms. We may say in brief that the average height of a child of two years, by which

time it usually begins to be measured standing, is about thirty-two and one half inches, to which there is an irregular annual addition of between two and three inches until the end of the eleventh year, when the start before spoken of begins and when the average height is about fifty-four inches. By fourteen the girl has reached five feet, and the boy is a little past it. After that time the girl grows slowly, and the boy outstrips her, the girl at sixteen averaging be-

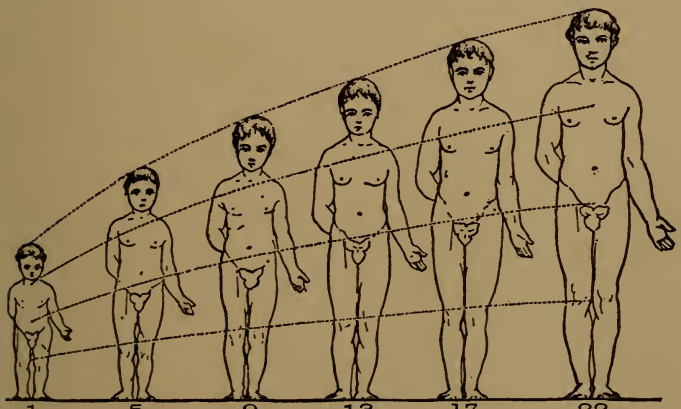


Diagram showing proportionate growth of different parts of the body at various ages from 1 to 22 years. Dividing the height at one year into four equal parts, the dotted lines show, for example, how the relative size of the head is diminished in the adult, etc.

tween one and two inches beyond the five feet, while the boy is probably four inches taller and well on his way to the completion of his stature, which is practically attained by the time he reaches his majority, although it is a fact (as shown by the careful measurement of recruits in our Civil War) that there is a small but steady increase in height until the age of thirty-five. It may also be mentioned that no adequate explanation has been offered for the enormous growth which has been observed of late years in some children, especially in adolescent girls.

The growth of the body is accompanied by a change of proportions. Every one is familiar with the relatively large size of the head of the infant as compared with that of the

adult. So, too, the great proportionate length and bulk of the trunk, the greater size of the abdomen in early childhood than later. The preceding cut illustrates fairly accurately the gradually changing proportions of the entire body. The open spaces of the skull, the anterior and posterior fontanelles, gradually close during infancy; the smaller, posterior one being completely closed so early, in about two months after birth, that mothers and nurses seem rarely to recognize its existence. The larger, the anterior, one—the "soft spot" of ancient nursery lore—usually requires about a year and a half for its complete obliteration, although this may occur several months earlier or later.

MUSCULAR DEVELOPMENT

In early infancy the actual muscular power is greater than would be guessed, on account of the want of coördination of the movements; an accidental blow from the baby's hand or foot reveals a good deal of force. The evidences of muscular coördination and control come very gradually. The first movements may leave us in doubt as to their intentional performance. Thus the infant's hand may very early close upon the mother's finger or any object placed upon its palm, while considerable time will elapse, probably as much as three months, before the child grasps anything with unmistakable intent. It will likely be quite as long before it balances its head of itself when carried in arms. Later still, after six and before eight months, as a rule, the child gets itself into a sitting posture in its crib, and is able to maintain it longer and longer. Soon it draws itself up beside chairs or other supports, usually between ten and twelve months, but the feat of walking alone is not usually accomplished until a month or two or even more of the second year have passed. But in walking, more than in the preliminary feats, probably because of the rather complicated movements of balancing required, a great variation in time exists. We have noted a child of eleven months

who walked with perfect freedom, and many, not apparently ill, who were equally active only at or near eighteen months. It should be especially mentioned that any intercurrent illness or disturbing condition of health, sometimes even so slight a disarrangement as a necessary change of diet, may impair the nice adjustment of function required for walking, and, in popular phrase, "put the child off its feet." We recall many such instances; in regard to one the mother remarked, "This child has learned to walk three times."

THE SPECIAL SENSES

The development of the special senses is quite interesting. Probably the general opinion is that infants are born with them all pretty well developed, but lack means of showing this. Actually it may be doubted if any exist at birth. The recognition of light as an annoyance seems to be present as soon as the child can be attended to, and the closed eyelids exclude it. Little by little it becomes used to the light, then seems to enjoy it, very early following a light, if not too intense, with its eyes. But clear vision can come only after the muscles of the eye can move harmoniously, and months, perhaps half a year, must elapse before the child has sight in the sense we usually mean by that word.

The new-born child is deaf, but its hearing comes after certain changes in the ear have taken place. In exceptional cases hearing has been definitely noted by the end of two months, but very many of the observations on this point are, in the writer's opinion, vitiated by the confusion of hearing with the recognition of concussion. Infants are notably sensitive to sudden jars even without sound, and many of the alleged instances of hearing seem rather to be cases of rude shaking.

Touch and general sensibility are both far less marked at birth than later. This is especially true of touch. Taste, at least as regards some substances, seems to be present very early. It may possibly exist at birth. It is not easy to

speak certainly about smell, owing to the confusion at the earliest age between manifestations of taste and of smell. But one who has watched the action of a young infant in being put to the breast can scarcely doubt that the sense of smell is stimulating its incoördinate struggle to reach the nipple.

SPEECH

Two other signs of development are eagerly watched for—the first word and the first tooth. Speech is remarkably variable in the time of its appearance. There can be little doubt of the correctness of the common belief that girls speak considerably earlier than boys. At whatever time speech begins, the labial sounds and the broad vowels are pretty certain to come first, and the infantile pa-pa and ma-ma have been accepted in very many tongues as the most endearing of titles. The child generally has at least so much of language within its first year.

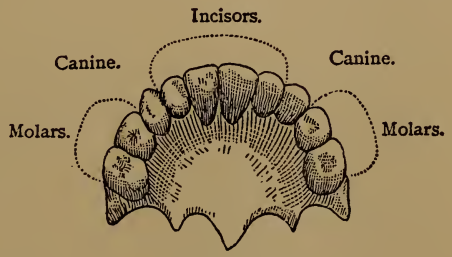
THE TEETH

Dentition, or the getting of the teeth, occupies quite a prominent place in nursery physiology and medicine. For some reason the eruption of the second set seems to interest parents far less than the first. Probably it is because the first teething has been charged with more causation of mischief—far more, indeed, than it is probably responsible for.

Before birth both sets already exist in the jaw in a rudimentary condition, and those of the temporary, or "milk," teeth are at birth well advanced toward their complete condition. This condition is as follows: The bulk of the tooth is made up of the ivory, or dentine, within which is a cavity having the same general shape as the tooth. This is called the pulp cavity, and contains a soft substance which is full of blood-vessels and little nerves, which may become very sensitive. The ivory of the roots or fangs of the tooth are covered by a bony layer called the cement. The part of the

tooth protruding above the gum is called the crown, and is covered with a layer of very hard substance called enamel, which is thick on the tops of the teeth, and gradually becomes thinner as the gum is approached. This is the part of the tooth we usually see, practically the only one visible in health. The whole process of the extrusion of the tooth from its place within the gum to its place without is called "teething."

The temporary set consists of twenty teeth, five pairs occurring in each jaw. They are in order, counting backward from the middle of the jaw, the central incisors, the lateral incisors, the canine teeth, and the first and second molars. The incisors are commonly called "front teeth"; the canine, especially in the upper jaw, are called the "eye teeth," probably from their situation beneath the eye, and those of the lower jaw are often called the "stomach teeth," presumably from a supposed greater amount of disturbance at the time of their appearance. The figure shows very well the appearance of such a set in one jaw. The order of the appearance of the teeth is not quite the same in the two jaws. Thus, the central incisors of the lower jaw appear most commonly in the seventh month. After a pause of a month or two the four upper incisors follow. After another pause, perhaps a little longer, come the lower lateral incisors and the first molars. A more decided pause then comes, and somewhere between the age of a year and a half and two years come the canines. The second molars, the "two-year-old molars," as they are sometimes called, usually come in the first half of the third year. So that on the average a yearling child will have six of its incisors. At eighteen months it will have

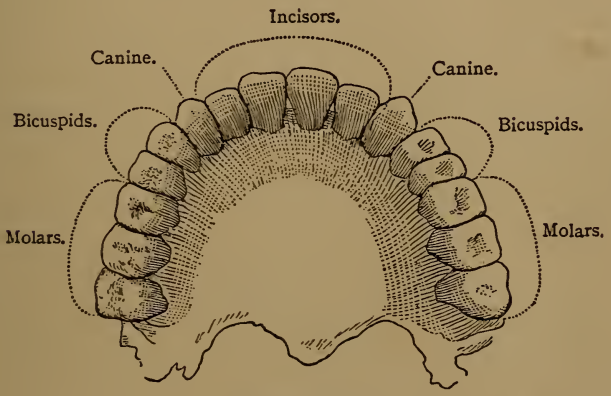


TEMPORARY SET.

added the other incisors and the first molars, making twelve teeth. The next six months add the canines, making sixteen in all at two years, and another half year completes the set of twenty teeth. But it should be clearly understood that in perfectly healthy children a variation as regards this time may exist of three months for the earlier teeth and of six months for the molars. Some children perfectly healthy may be even older than nine months before a tooth appears, and the writer has several times seen teeth coming easily through at four months, and proportionately early for the rest of the set. Unusual delay in teething will always raise an inquiry as to the existence of the condition known as rickets. But it is also very important to know the family peculiarity in this regard, as with perfect health it causes remarkable variations. In some families teeth come very early, in others very late. Teeth at birth are occasionally met with; cases are reported in which the peculiarity has been discovered to have existed for several generations. The present writer has noted supernumerary teeth in three consecutive generations, and it may have existed still farther back. Observations in dispensary practice show that artificially fed children are distinctly behind suckled ones in time of teething. Whether this is equally true of carefully and wisely fed children we have as yet not sufficient data to determine. Certainly much depends upon the time when the artificial feeding became necessary, children who get a good start often keeping up the process normally.

There is a rest of about four years, when the eruption of the permanent set begins, "the six-year-old molars," as they are popularly called, being the first to appear. The name gives sufficiently closely the ordinary time of their eruption. They come next to the second temporary molars, and seem to make a decided variation in the order of the appearance of the teeth. But the remainder of the permanent teeth do appear in a sequence very similar to that of the temporary ones. Thus, the central incisors generally come at about seven years, the lateral ones following quickly. The first

tricuspids come from nine to ten years, the second bicuspids coming about a year later. The canines then come, usually between twelve and fourteen; the second molars follow pretty quickly. It will be noted that the precedence of the molars over the canines in the temporary set is imitated by the forwardness of the six-year-old molars, and that the place occupied in the temporary set by the molars is taken by the pointed teeth bearing the new name of bicuspids, while the true molars come behind them in position. The



PERMANENT SET.

last molars, four in all, are called wisdom teeth, because their eruption is delayed until an age usually considered the "age of discretion." They may appear at any time from seventeen to twenty-five years, usually about twenty-one.

A word should be added regarding the care of the teeth. From their first appearance they should be kept clean by means of a soft cloth and water. Their durability to a great degree depends upon this. It is a mistake to suppose that because they are temporary the first set may be safely neglected. It is important that they be kept in as good condition as possible until their successors appear, and in case of any defect or decay appearing it is well worth while to give them the advantage of a dentist's care.

Care of the teeth should include systematic cleansing of the mouth as well.

TEETHING

THE foregoing account of the teeth has said little of the process of their eruption, or "teething." The usual symptoms are these: As the salivary glands are developed rather before the appearance of the teeth the flow of saliva, or "drooling," which follows is usually considered as an indication that teeth are coming. Possibly the irritation of the gums may excite movements of the mouth, lips, and tongue which exaggerate the flow of saliva, but in the main the two occurrences are simply coincident. When the eruption is actively in process the gum is swollen above and around the coming tooth. It may be hot and tender, and the child may be thirsty, fretful, disturbed in sleep, possibly feverish, and sometimes remote symptoms, such as bowel disturbances or more pronounced nervous symptoms, may appear. With the appearance of the tooth through the surface of the gum the local symptoms abate, as well as the general ones, so far as they have depended upon the irritation of teething.

But it should be very clearly understood that disturbances have been attributed to the process of teething immensely beyond the truth, owing to coincidences being mistaken for results. No one familiar with children's diseases at all doubts that very much disorder of health and discomfort occur at the time of teething. Few will deny that some of this suffering and illness is caused by the nervous irritation of the process. Much of it is, however, very indirectly, if at all, dependent upon the teething. Thus the immense majority of "teething diarrhœas" are due to improper feeding, either alone or through its overtaxing a digestion already disturbed by nervous irritation. Many proofs of this could be adduced, but it is only necessary to remind the reader that those teeth which are cut while the infant is at the breast cause little disturbance. It is the "eye and stomach teeth," teeth which come in the middle of the second

year, when the infant is not only weaned, but is most likely fed with many improper things, which cause the greatest trouble. And if this period coincides with hot weather, when the infant's food is often spoiled, all the necessary circumstances have been aggregated to give the "second summer" its popular ill repute.

It is not of great importance to decide just how much disturbance at the time of dentition is actually due to the process and how much to other causes. But it is very important to remember that teething attended with other than local disturbance is pretty certainly not normal teething, and, above all, that stomach and bowel troubles are not to be neglected as normal, and far less to be encouraged, as is not infrequently done, as a beneficial relief to the system.

The local symptoms can often be relieved by the proper use of the gum lancet, and remoter symptoms should be properly treated.

SATISFACTORY GROWTH

The foregoing remarks upon growth and development will have practically answered many questions often asked by mothers. It will be inferred that evidence of good nutrition will be found in the fact that a child's growth and development are near that degree described as the average. Too great variations either in fatness or leanness, too slow growth, or rapid growth, with coincident feebleness, are reason for inquiry into the adequacy of the child's dietary or hygiene. Such inquiries are to be made thoughtfully and with proper frequency, instead of, as is too frequent, with alternations of anxiety and neglect.

The thriving child is generally fairly plump, being neither skinny nor offensively fat. Its skin is smooth and soft. It sleeps and eats, does not cry without evident reason, performs its functions properly and regularly, and, if it has not been taught bad habits, is content to lie quietly in its crib when it has been fed and made comfortable.

As the child advances, its occupations and requirements enlarge, but it is still true that it is content if comfortable. It adjusts itself to its surroundings very nicely. The mother who attends her own child, suckling it if she can, bathing it, or at least attending at its bath, will soon acquire a knowledge of the details that go to make up the "comfortable baby," to use a nursery phrase. Her eye will quickly notice a departure from this standard. The same sort of care carried through childhood will give prompt warning of anything amiss.

It is well also to notice whether the development is going on in a symmetrical manner, or at least as symmetrically as may be fairly expected from the child's heredity. An occasional look at the straightness of the spine or the squareness of the shoulders is worth while, without waiting for the dressmaker to point out defects in these regards. Examine the feet to see if they are not outgrowing the shoes, becoming crumpled in a pointed shoe, or acquiring corns, callus, or ingrowing nails. Proper shoes have been already described (see p. 54). Shoes should always be worn which, as far as practicable, conform to the natural shape of the foot. When the dictates of fashion meddle with this rule, it is well to remember before abandoning it that there is more "style" in a free walk than a fashionable hobble. In cold weather, especially in the country, watch for chilblains, which are more easily prevented than cured. Also notice if there is a tendency to cold hands or feet, which is usually considered evidence of a poor circulation.

When the child begins to use its eyes, notice whether it gets nearer to or farther from objects which it is examining than do other children. If so, it may be near-sighted or far-sighted. Glasses may be used quite early in life—that is, as soon as the child begins to study or do any near work—with advantage in the saving of the capacity of the eyes. Notice also if it have enjoyment or discrimination of colors. If there be, while the child is still young, rea-

son to believe that it is in any considerable degree color-blind, it should have especial help in such discrimination.

Similarly, notice its hearing, and especially if its speech be unusually slow in developing. And even if the latter be normal do not condemn a slow child as stupid or inattentive until it is certain that it hears well and that there is no obstruction of the nasal passages from adenoid growths or otherwise. In addition, it is proper to notice whether or not a child breathes, waking or sleeping, through its mouth. If so its nasal passages are probably obstructed.

OUTGROWING DEFECTS

THE question is constantly asked, regarding various defects and diseases, "Will the child outgrow it?" The general answer is this: If the defect be due to a nutritional or hygienic error which can be recognized and corrected, the defect will probably be improved or obliterated by such correction. Otherwise it is not likely. For instance, suppose a rapidly growing child shows a tendency to round shoulders. Now, if it be found that this is due to near-sight or too much desk-work or too low a desk, and proper glasses be provided and the proper changes be made regarding the desk and amount of work, the defect is pretty certain to disappear. But if precautions be neglected the defect will persist, and probably increase. Similarly of lateral curvature of the spine at its beginning, of some curvature of the legs, or of distortions of the feet in their earlier stages. So also club-foot, recognized and treated early is quite a tractable disorder; if neglected till late it is very obstinate.

But of diseases in the ordinary sense of the word, as distinct from peculiarities of development, it is fair to say that they are rarely outgrown. They run their course. Their later stages may differ in modes of manifestation from the earlier ones. The untrained observer may not connect

the two. But the physician often sees in an adult annoyance the remnant of or the sequel to an uncured malady of childhood.

PHIMOSIS

This may be the proper place to speak of a retarded developmental condition called phimosis. At birth the foreskin of male infants is usually somewhat long and narrow. For this reason and because of adhesions still remaining between the foreskin and the parts it covers, the foreskin cannot usually be then pulled back. But it is not many months (certainly within two years) before the developmental changes, as a rule, render this retraction possible. A certain number of cases do not undergo this change. In them the condition is not outgrown. In such, or whenever there is irritation of the parts, due to the retention within the foreskin of matters which should be cleaned out, it is well to relieve the condition by the operation of circumcision. It is an operation of little gravity, and, as is well known, it is performed as a ritual ceremony on the eighth day by those of the Jewish faith. There is no objection to its performance under ordinary circumstances. On the other hand, it is by no means universally necessary, as some "faddists" pretend.

CONDITIONS OF PROPER DEVELOPMENT

The fact that a satisfactorily developing child is usually comfortable and quiet has been mentioned. It is also well to remember that the converse is equally true—that, namely, a child which is becoming nervous is not doing well. Not that all children will be alike in temperament, any more than will their parents. But if a child has by heredity a tendency to nervousness it ought all the more to be saved from exciting and irritating surroundings. Good hygiene, good but not excessive nutrition, and calm environment will give the best chances of a stable nervous system. A few

details may be given. It is to be remembered that the life of a new baby is almost a vegetative one. Food and sleep and the little waking time not devoted to necessary toilet the child devotes to acquiring the special senses, and very gradually learning to use them. The amount of use will in effect depend upon the amount of nerve force it has to spare. Obviously, anything which may be done to increase the child's activity in this respect is to make an increased demand upon this nerve force. So for the first few months do not attempt to play with it. It is not a toy. For those who must have a fixed rule it may be said, do not play with a baby for the first three or four months. But the essential thing both then and thereafter is to follow the child's initiative. The soothing sound of its mother's voice comforts and encourages it. So do the gentle touches with which it is laid to rest. Every one knows how easily it is startled by sudden or loud noises. As it gains the use of its senses and looks at or listens to things about it, answer its look with a smile or its listening with a quiet word. But do not excite it with play for the sake of seeing its response, and then wonder why it cries when you cease. This rule of sympathetic appreciation of and response to the child's attempts to get into touch with its surroundings without over-stimulation goes all through the developing age. It is less imperative as the nervous system becomes more stable, but it continues through school life and through the growing years.

This brings up the question of overstudy and of precocity and dullness. The writer believes that in health there is practically no such thing as overstudy. The mind does what it can, and then rests. If a child becomes nervous under study or seems less clever than usual, the intelligent thing to do is, not to assume that the task is too heavy, but to ascertain if the child is well; if it sleeps enough and well enough; if it eats enough, slowly enough, regularly enough, and of the right kind of food; if its physical functions are properly performed; if its eyes, ears, and throat

are normal; and, lastly, if there is any reason why the child is doing its work under worry or in hurry. The child may be unable to do its arithmetic examples because it has an indigestion, or is cutting a molar, or what not. Exhaust the physical causes before attacking the school curriculum.

If the suggestions about calm of nervous system are kept in mind, there need be no worry about precocity. Much is heard about the need of keeping books away from precocious children. Unwholesome or exciting books should surely be kept away. But here again it is safe to trust to the child's initiative. Any reading or study of wholesome books which it does of its own accord will do no harm, provided it gets proper outdoor air and exercise. But the child is not to be constantly stimulated by the conversation and readings of its parents and adult friends. This is the explanation of the precocity, often unpleasant, of invalid children. Debarred from the sports of well children, they are in constant contact with and under unceasing stimulus from adult friends, who naturally desire to make up to the invalid through assiduous attention the wholesome enjoyments necessarily lost.

In the management of dull or somewhat backward children the application of the principles takes other forms. It has been shown by careful scientific and vital examinations of large numbers of school children [1] that forwardness and good physical development are found together, that poor development of body and mental backwardness are associated. If, therefore, a child be backward, its physical condition and its hygienic surroundings should be looked into, and any errors corrected if possible. The normal condition being restored as far as practicable, it is proper to inquire then whether any special help and stimulation are really desirable.

[1] Quite recently Dr. W. S. Christopher, of Chicago, has examined the public school children of his city with such results.

VIII

FOOD AND FEEDING

OF course the basis of all growth and development is proper nutrition, and this depends upon proper food and feeding—that is to say, the presenting to the child of such aliment and in such form as its digestive apparatus is capable of appropriating.

BREAST MILK

EVERY one knows—although it sometimes seems to require a pitiable amount of argument to convince individuals of the truth—that the proper and ideal food of a new-born infant is breast milk. It is not claimed that all breast milk is just the same, any more than that all infants are the same in digestive power and requirements. Nevertheless, leaving out a few cases of diseased or imperfect breast milk, it may be safely asserted that there is such an adjustment between the digestion of an infant and its own mother's milk that the latter, if sufficient in amount, does agree with the child and, as a rule, sufficiently nourishes it even in cases where, from analysis of the milk, we might have doubts that it would do so. This is one of the reasons why it is not always practicable to substitute one breast for another.

This fundamental fact of the suitability of breast milk as an infant's food is more completely understood when the chemist points out that it contains in a wonderfully adjusted form all the ingredients which are found in the necessary food not only of infants, but of all human beings,

not to mention other creatures. These ingredients are the proteids or nitrogenous elements, the fats, the carbohydrates, and mineral matters. In all milks the proteids are represented by the part which forms the curd—that is to say, the casein and the other albuminoids intimately associated with it; the fat of milk, when separated, we call butter; the carbohydrate of milk is milk-sugar, and in solution are a number of salts, chiefly those of lime, soda, and potash necessary for the economy.

These ingredients are found in varying proportions in the milk of different animals, a fact which must be kept clearly in mind when the question of substitute feeding comes up. For us the standard proportions are, of course, those of breast milk. Taking the average of many analyses by various chemists, we arrive at the conclusion that the proteids in human milk are between one and one half and two per cent. of the weight of the whole; fats, about four per cent.; sugar, about seven per cent.; and the salts, less than one fourth of one per cent. But, as has been already said, these proportions are not fixed. The percentage of proteids and fat are very variable, from two to six per cent., roughly speaking, while that of sugar is much more nearly fixed. The great bulk of the milk—seven eighths by weight—is water, and in it the nutrient elements are dissolved or suspended in a state of fine division, so that they are presented to the digestive organs in a form which they may readily attack. Thus, of the proteids the lactalbumen is really dissolved, while the casein, finely divided, is held in suspension, probably through some action of a lime phosphate. The fats are also finely divided, and held in the form of an emulsion, while the sugar and most of the salts are really dissolved. These few facts are given because they all seem to have bearing upon the preparation of foods made in imitation of breast milk.

Each of these ingredients is essential to a proper food. There is a constant waste of nitrogenous matter in the tissue changes which are characteristic of life. Only by proteids

can this waste be made good. But if one were to try to live on proteids alone, as, for instance, upon egg albumen, the heat of fat-producing elements would very soon be missed, as heat is gained from proteids only by a relatively extravagant consumption. The proteids of breast milk are very digestible, more so than any other, to the human digestion, and herein lies, as will be seen later, one of the greatest difficulties of artificial feeding of infants.

The fats, on the other hand, are heat producers, and if combined with proteids render a smaller amount of the latter necessary to nutrition. There are also a number of tissues, bones, and nerves especially, to the nutrition of which fats in some way contribute. The animal fats are decidedly more digestible than are vegetable fats, and among the former the fats entering into butter are particularly digestible. A suckling child gets in its breast milk an amount of butter gradually increasing from half an ounce to an ounce and a half daily, speaking approximately. It is not strange, therefore, that chemical analysis shows that quite a considerable proportion of this passes away in the evacuations. In so doing it acts as a laxative, and is not therefore useless.

The carbohydrates are also heat producers, and they are in part changed into fats and as such, together with a part of the fats taken into the system, are stored up in the tissues, especially in the considerable fatty deposits so characteristic of well-nourished infancy. The carbohydrate of milk is milk-sugar, its name showing that it is peculiar to this liquid. Yet, other sugars of the same group, for instance, cane-sugar or malt-sugar, can be substituted successfully for the milk-sugar, with little, if any, of the inconvenience which attends the substitution of other proteids or fats for those of milk. It is, however, not safe to carry the substitution of carbohydrates very far. Thus, while it is perfectly true that the adult digestive organs have the power of changing a large amount of starch into sugar, this is not true for the infant, in whom the power exists only in

a slight degree. Hence the digestive disorders so often seen in infants when the latter are obliged to take a food containing starchy matter in any considerable amount. The small amount of salts in milk are of direct use in some instances, as the lime salts needed for the bones, and also probably quite as much so, although not so evidently, in facilitating various nutritional processes, to the proper performance of which the presence of these salts seems to be essential.

If we assume that a good, suitable breast milk is the best food for an infant, it hardly need be said that a substitute food should approximate as nearly as possible the constitution of breast milk. How shall this be accomplished? The oldest substitutes of which we have knowledge were the milks of the domestic animals, whole, diluted, or modified in some way. To-day scientific attempts to provide accurate substitutes have brought us back to the same basis.

ARTIFICIAL FEEDING

But what of the multitudes of proprietary infant foods? Little need be said. It would be useless to go into any prolonged consideration of such foods as cannot be recommended. The foods in common use are of several types.

First, because probably the longest in use, are the cereal foods, used with water or with milk. Such are the arrow-root, various flour and meal mixtures, more recently the barley and oatmeal preparations, and many others. Of course, these and the following, if milk enters into the preparation of the food, cease to be cereal preparations, but are of mixed types.

Second, the malted foods which originated with the chemist Liebig, and by his name they are often called.

Third, the milk foods. Condensed milks ought here to be included, because, although not called infant foods, they are largely used as such. They are essentially condensed and dried milk, with the fat removed to a great degree to permit of the drying.

Beside these groups are many foods not easy to classify,

many of them being compounds in which one or more of the foregoing type ingredients are mingled.

Now, the first group has the serious objection that the foods contain a large amount of unconverted starch—that is to say, starch which must enter the digestive organs as starch, which, as has just been said, the young infant's digestion cannot properly deal with.

The group of Liebig's, or malt, foods usually contain an enormous amount of sugars, some of it being cane-sugar, but the great bulk either malt-sugar or grape-sugar or both, neither of which is harmful in proper amount, but which, as they are found in the foods, tend to give the infant excess of fat; and since the foods are deficient in fats and the proteids are not always of animal origin the strength and nutrition of the child are really below normal, while its bulk is quite imposing. As a result, the show baby is often rather an alarming object to the physician familiar with infants in health and sickness. The milk foods usually, if not always, have the defect that the fat was in part removed from the milk in order that the food could be made or preserved. In so far, if for no other reason, they fail to represent milk as a basis for infant food.

It is not charged that these foods are distinctly unwholesome, or that they will not sustain life. A number of them are intended to be prepared with milk, and owe most of their value to this addition, which would usually be itself a better basis. Further, some of them, in later infancy or for older children, may without impropriety become a part of a dietary already amplified. But the writer has for many years never felt safe to keep a child long upon any one of them. For short periods, especially when an overfed digestive system needed rest, they have been found useful.

COW'S MILK

What, then, is to be the basis of a proper infant's food? Practically, we are driven to the milk of some domestic animal. In civilized countries that of the goat, the ass, and

the cow is the only available one, and the last named is the only one in this and most countries which can be obtained in sufficient quantity and with sufficient certainty to make it worth considering. But it must be kept in mind that cow's milk is not the best food for young infants, but that it is the best basis for such a food. Many things have to be attended to to obtain this desirable food, and these relate to two general objects—the procuring of pure cow's milk and the modifying of that milk in such ways as will adapt it both to the nutrition of the infant as well as to its digestive powers.

What is *pure milk?* The ordinary answer is milk just as it comes from the cow, to which no water and no adulterations have been added. But this does not meet a physician's idea of pure milk, which is of late expressed by the term *clean milk.*

PURITY OF THE MILK SUPPLY

The cow is not a tidy animal, even with the freedom of a pasture. Under the conditions in which she is usually kept in the winter she is dirty enough. Any one familiar with her appearance in or about the ordinary country barn prefers to forget it. Ordinarily the milker is hardly an improvement in this respect. And the froth of the "foaming pail" is usually well decorated with unmentionable filth before the milk is strained. These points need not be dwelt upon, for the present object is not to prevent the use of milk, but to stimulate the use of good, clean milk. For quite a number of years growing attention has been given by physicians and others who were enthusiastic in the matter to the production of milk for the market which should be really pure. As knowledge, scientific and practical, has increased, improvements in method have become possible, until now milk of remarkable purity, as well as of uniform high quality, is obtainable in many of the large cities. Milk nearly as good ought to be procurable in country places and small towns if consumers are made aware of the neces-

sary requirements for its production and insist upon them. Probably the best way to put forward those requirements will be to describe briefly and without unnecessary detail what actually is done in some of the best clean milk-farms in the vicinity of New York.

First, the farm itself is chosen for the excellence of its pasturage and water-supply, the wholesomeness of its soil, and the drainage of the same. The barns are so constructed that there shall be ample room, air-space, sunshine, and ventilation, without exposure, for every cow. The floors are made of some substance which can be kept clean and free from the soaking in of filth, cement-like materials perhaps having the most advantages. Devices for watering and feeding in the cleanliest manner are employed, and others for the complete, rapid, and frequent removal to a distance of all filth. The air of the stable is always free from foul odors. The feed is arranged upon the most approved schedules, based upon experience and scientific experimentation, and kept in other barns away from the stables.

Before a cow can be admitted to these barns she must have passed the quarantine—that is to say, every cow bought is brought to a quarantine barn, not only to await the development of any acute disease she may have become affected with, but in most of these farms to be subjected to the tuberculin test. Unless this shows her to be free from tuberculosis she is rejected. If she proves to be sound she takes her place in the milking-herd.

Thus far the provisions insure a sound cow brought into the best hygienic surroundings, fed and attended in the best known manner. Such a cow should furnish sound milk. The next problem is how to keep the milk uncontaminated on its way from the udder to the consumer. The ordinary sources of contamination are from the cow's body, from the milker, from unclean vessels or containers at every step. The cow, by reason of the great tidiness of these stables, is free from obvious filth. In addition, each cow is daily groomed, like well-kept horses. Still further, just before

the milking the abdomen and adjacent parts of the cow are brushed, to remove any loose hairs which might fall into the milk, and the udders are cleansed by a man who precedes the milker.

The men who are employed about the stables are carefully and frequently examined as to their own health, no one suffering from chronic or acute ailments being allowed about the cattle. Owing to the danger of the conveyance by milk of some contagious disorders, notably scarlatina, which usually prevails among children, some model dairies have excluded all married men from their service for fear that they should bring contagion from home to the milk. The milker, before beginning his work, puts on a clean white suit of overalls and a white cap, carefully cleans his hands and his nails. This washing is usually repeated after the milking of two cows, in some dairies after each cow. But the dry hand only is used in milking.

All vessels, from milking-pail to bottles, are carefully sterilized with steam, often under pressure, before using. Each milking-pail is protected by a well-fitting cover, in the center of which is a circular piece of wire gauze surrounded by a high lip of the same metal as the cover, so that the milk is drawn into a sieve pan through which it must run to enter the pail. It is customary not to permit the very first milk to enter the pail, as it is known that the udders themselves usually contain bacteria in considerable number. Hence the first spurts are thrown away. The milking-pails are emptied into sterilized cans, and the latter quickly transferred to the milk-room at a distance from the stable. Here everything is kept in a state of complete cleanliness, the utensils, apparatus, and the room itself being cleansed with steam. The milk is strained through absorbent cotton, and is rapidly cooled by cooling apparatus, so that in a very short time, not more than twenty minutes from the udder, the milk is cooled to the desired temperature, which in the best dairies is 40° F. Of course, the same scrupulous, scientific cleanliness is carried out in the bottling and the

keeping of the milk until placed in the hands of the consumer.

The effect of these "model" dairies has been far-reaching. Within a very few years the writer has heard the proposal to exercise such care as has been described not only characterized as Utopian, but greeted with laughter. Now, not only do such farms exist in the vicinity of many great cities, but many other farms are conducted in a way which shows the influence of their example. It is now easy to get milk of a degree of cleanliness which a few years ago was, at least in most places, unobtainable.

The purpose of all these precautions is of course to obtain a milk free from all disease germs, and also with as few bacteria as possible. The various undesirable changes of milk—its "spoiling," "souring," or "turning," in common parlance—are due to the activity of some of the kinds of these organisms. It is not expected that milk will be obtained entirely free from bacteria. It is doubtful if such can be had, or if the human milk drawn from the mother's breast is ever absolutely sterile. In most cases we know that it is not. We also know, however, that milk containing few bacteria keeps very well, and may in case of need be kept, if cold, without cooking or sterilization, many days without any harmful change.

But it is a part of the régime of a clean milk-farm to furnish its product only very fresh. The milk ordinarily sold in great cities in the morning is a mixture of milk of the previous morning and of the night before—that is to say, it comes to the consumer twenty-four or thirty-six hours old. Under the circumstances, it is wonderfully good. But it has always been the aim of the producers of clean milk to deliver it within a few hours after it is drawn, and it is sold not more than twelve hours old, often less. So much of the details of a "clean" dairy has been given in order that those who will read this may have some standard by which to judge of the state of the source of their own milk-supply and the probable condition of the milk itself. It

is true that when milk is not what we wish it to be, we have in Pasteurization and sterilization invaluable resources, but the object aimed at is a milk-supply sufficiently pure to render these aids unnecessary.

A pure milk-supply being assured, *what shall be the infant's food?*

THE CONSTITUENTS OF MILK

It cannot be pure cow's milk. This is so generally the experience of observers not only now, but during generations, that we need not stop to consider the exceptional instances of infants, usually not the youngest, who have been able to digest whole milk and to thrive more or less well. The objection to the use of whole milk for young children is not the result of scientific theory, nor is it based merely upon the experience gained from using milk not perfectly fresh, as in cities, but it was recognized equally well long ago in country districts when the milk could be had directly from the cow. Nevertheless scientific inquiry makes evident the reason of the difficulties universally experienced. The constituents of human milk have already been given as, on an average, approximately:

Fat	4 per cent.	Salts	$\frac{1}{5}$ to $\frac{1}{4}$ per cent.
Sugar	7 "	Water	87+ "
Proteids	$1\frac{1}{2}$ "		

This, of course, sets aside for the moment the variations in different specimens. Examined in the same way, good cow's milk from a mixed dairy herd averages about as follows:

Fat	4 per cent.	Salts	$\frac{3}{4}$ per cent.
Sugar	$4\frac{1}{4}$ "	Water	87 "
Proteids	4 "		

If there be in the herd a large proportion of Jersey cows, the percentage of fat will be appreciably higher; if of Hol-

stein cows, it will be lower. Sugar and proteids vary little; fat varies greatly in different specimens of milk, a fact perfectly well recognized in the phrases "rich milk," "creamy milk," "blue milk," in popular use.

Now, it will be at once noticed that the amount of water is about the same in human milk and in cow's milk, that the salts are much more abundant in cow's milk, and that of the three ingredients, fat, sugar, and proteids, the total is very nearly the same, the human milk often comparing more favorably than as given in the above tables. But it will also be noticed that this amount is divided very differently in the two milks. The amount of fat differs little. Of sugar human milk contains much more, nearly twice as much, while the cow's milk equalizes this deficiency in solids by an increased amount of proteids, which is pretty uniformly near the average of fully four per cent., while in human milk the amount is very variable. We have averaged it at one and one half per cent.—not much more than one third the amount found in cow's milk.

There is still further a difference not evident in the tables, which is, however, quite important—namely, that the proteids in the two kinds of milk differ not only in quantity, but in kind. It has already been mentioned that the proteids in breast milk are very digestible. This is not equally true of the proteids of cow's milk for the infant's digestion. Both kinds of milk have at least two kinds of proteids, one, called casein, is coagulable, the other, called lactalbumen, is soluble and, while coagulable by heat, makes a very much less tough curd than does casein. In cow's milk the casein makes the great bulk of the proteids, while in human milk the lactalbumen is twice as abundant as the casein. Every one familiar with infants will at once recall the soft, light curd of regurgitated breast milk, and the heavy, often hard, curd of vomited cow's milk.

Inasmuch as, so far as is known, the milk-sugar in both kinds of milk is of the same kind, and the fats essentially the same, it will be seen that the difficulty in adjusting cow's

milk to the needs of a young infant must lie chiefly in the management of the proteid ingredient.

If the relative proportions of the three nutritive ingredients, fat, sugar, and proteids, in the two kinds of milk be kept in mind it will at once be seen that by simple dilution of cow's milk with two parts of water the proteid percentage of the mixture would be not far from that of human milk. But the fat percentage, which should be unchanged, will be likewise diluted, as will that of sugar, which was far too low before dilution. Sugar of milk or another sugar can be added in the necessary quantity, but whence shall the fat value be obtained? This last problem is the stumbling-block of the commercial foods, owing to the difficulty of preserving the fats.

MODIFIED MILK

Long ago the value of *cream*, or rather "*top-milk*," as a basis of food for infants was recognized, as it gave a larger percentage of fat than did the whole milk. To such or a similar basis has the scientific search for a food brought us back—to a basis, namely, which offers us fat and proteids in such proportions than on dilution the relative percentages which we desire may be obtained. The great improvements in infant feeding of recent years in America consist not in providing a new kind of food, but in applying methods of precision to a kind of food shown by long experience, as well as by chemical inquiry, to be peculiarly adaptable to the needs of infancy. With the improvements of dairy appliances it is possible to separate the cream from the milk not only quickly, but in almost any desired degree of fat value. The fat value can also be accurately determined. With these facilities, the next step was a natural one—namely, to recombine the elements of the milk in such proportions as shall approximate those of human milk, or to make any other similar combination which may be desired.

The credit of the practical working out of the details of

this problem belongs primarily to Dr. Rotch, of Boston, and Mr. G. E. Gordon. Their work has been seconded by that of pediatrists all over the country, and during ten years not only have great improvements in method been made, but a very helpful accumulation of exact experience has been formed, so that to-day the matter of infant feeding is upon a much safer and probably more stable footing than ever before.

The methods of work in a milk laboratory do not directly concern us here. The physician writes his prescription for the composition of the food in percentages as he might write for a medicine. The laboratory prepares the former with the same exactitude as the skilful pharmacist dispenses the latter. The points of direct interest are that the milk employed is of the best type of "clean milk," that every manœuver in the dispensing is performed with care for complete scientific cleanliness. The food is delivered to the consumer precisely as ordered.

The comment is often made, rather as an objection, that the laboratory can only be availed of by those living in or near great cities, and among them only by those able to spend a considerable sum for the infant's food. In one sense this is true, and in another not. The direct use of the laboratory is in effect limited to those described. But the wider usefulness of the laboratory is through the suggestions it has given to the home modifications of milk; and if all milk laboratories were to cease their operations the lessons they have taught would enable physicians everywhere more wisely to arrange the food of infants under their care.

The home modification of milk can be very satisfactorily carried out by any intelligent and careful person. The principles are quite simple, and may be applied by any one; careful cleanliness will meet all the details. One thing must be first insisted upon, as the writer has very frequently encountered misapprehensions on this point. Milk

modification does not aim at making an infant food, but food for each individual infant. If a milk mixture were compounded to contain the same proportions of fat, carbohydrates, and proteids as average breast milk contains, it might suit the needs of more infants than any one of the many foods already proposed; but, after all, it would be only one other "food." The aim of milk modification is to provide an elastic method of feeding, so that the proportion of each ingredient may be without difficulty adjusted to the nutritional and digestive needs of each child. The variable digestive power of different infants has been commented on, as well as the fact that infants seem to be born with digestions adjusted in some way to the milk of their own mothers. It would, therefore, scarcely be expected that any one mixture would suit every young infant. It is the business of the physician to be familiar with the details of infant feeding, and, in case of necessary weaning, to estimate the needs and capacity of the child at that time, and give directions how the food shall be prepared to meet them. If his judgment leads him to prefer home modification of milk, he writes no prescription to be filled, but he probably has one in mind, the working details of which he gives to the mother or nurse in charge.

How are these details worked out? It is not strictly necessary for the person who is to carry them out to know this, but it will enable an intelligent mother to second more efficiently the physician's plans if she does know. Still further, sometimes the guidance of the physician is not obtainable, and the mother must work by herself. Different physicians may arrive at a conclusion in different ways, but the essential things considered are these: The age of the child; its condition as compared with the average infant of that age as regards development, digestive peculiarities, aside from definite illness; and, based on these facts, the composition of the food likely to suit; the amount of it to be administered at one time, and the number and frequency of the feedings.

VARYING PROPORTIONS IN FEEDING

THE quantity may be advantageously first considered. This has been carefully estimated by a good many accurate observers, using somewhat different methods, but arriving at results so nearly the same as give them a good deal of authority. The main factors in forming an opinion are the amount which the stomach of the infant will comfortably contain at different ages and the frequency with which the stomach must be refilled. The table below gives a pretty

Age.	Interval in hours between feedings in day time.	Number of feedings in 24 hours.	Number of feedings between 10 P.M. and 7 A.M.	Quantity in ounces at each feeding.	Total amount in ounces in 24 hours.
From 3d day to end of 1st week	2	10	2	1 to 1¼	10 to 12
2d and 3d weeks..	2	10	2	1½ " 2	15 " 20
4th and 5th weeks	2	9	1	2½ " 3	22½ " 27
6th and 7th weeks	2½	8	1	3 " 4	24 " 32
8th week to 4 months	3	7	1	4 increasing to 5	28 " 35
4 months to 8 months	3	6	0	5 " " 7	30 " 42
8 months to one year	3 to 3½	5	0	7 to 9	35 " 45

good estimate of the amount usually required. In preparing it the writer has made use of his own experience, and has compared his results with the tables given in several of the more recent text-books, some of which are very similar and therefore confirm the writer in his estimates.

It is, of course, to be understood that one child may actually need more than another, hence a little variation in quantity is provided for. If it is necessary to increase, let it—in a healthy child—be done by increasing the amount in each feeding, not by diminishing the interval between feedings. The stomach of the child must have its proper rest.

In some cases it is possible to get on with but one night feeding from the first, and if the infant's habits of sleep favor this plan it is to be encouraged, but two feedings are allowed during the first few weeks as being more commonly called for. But the giving the breast or bottle more frequently, or the continuance of two night feedings for a child several months old, is distinctly reprehensible. The quantity for the single feeding would better be kept at or near the lower figure given for that age, and not raised, unless it be quite evident that the amount given is insufficient. Some observers hold that heavier children require more than lighter ones. It may possibly be so, but to the writer it has seemed that thin infants, those born so, have at least as eager appetites and make as large demands as fat babies. In any case, the advice just given would better be borne in mind, as in artificial feeding the tendency to give too large a quantity is almost universal. If a child is happy and makes satisfactory gains in weight and development, the amount should be increased with circumspection. It will be noticed that the increase in volume of daily food is more rapid at first than later. But it will presently be seen that the composition of the food also progressively changes, so that while the amount of liquid is not greatly enlarged the amount of solids, especially of proteids, contained in the liquid is considerably increased.

How shall we be guided in planning the change in the solid constituents? There is but little change in them in breast milk during the course of suckling, and our ideas as to the proportions are the result of observation as to the mixtures which in practice do best agree with infants deprived of the natural supply. We need enter into no speculation as to why the breast milk may be satisfactory without change in composition for so long a time. For our purposes it need only be remembered that the infant, in taking artificial food, even if made from cow's milk, is taking nutritive elements which are, for it, far less digestible than those of its mother's milk. The mixtures advocated

by the most experienced workers in this line at the present time have been largely wrought out by starting with certain ones approximating breast milk in chemical proportion, and carefully adjusting them experimentally to meet digestive difficulties as they arise. In other words, physiology has built upon a substructure of chemistry.

As a matter of fact, therefore, mixtures are first made of a lower percentage of proteids and fats than is found in mother's milk, and not until the child is three or four months old is its food so strong by analysis as the breast milk. Such a method seems to give the best results. Thus, a child in the first month would not reach a proteid percentage of one per cent. It would begin in the first week with perhaps not much above one half of one per cent., and go up to three fourths. The fat per cent. would be only about two per cent., or one half that of breast or cow's milk, which we have assumed to be four per cent., and so on. Of course, at such an age the monthly nurse would probably still be in attendance, and the physician would direct the mixture of the food and the mother would be spared the trouble.

Let us suppose, however, that the mother were obliged, when the child was two months old, to make a food herself which would supplement wholly or partly her failing breast milk. The table (page 91) gives about twenty-four ounces, or a pint and a half, as the daily amount required for a child wholly artificially fed, to be given in meals of about four ounces each. This amount (four ounces), then, is to be given at the hours when suckling should take place, provided the breast cannot afford the meal, and as many times in the twenty-four hours as the breast fails.

BOTTLES, NIPPLES, AND MEASURES

Before mixing the food the necessary outfit—bottles, nipples, etc.—must be procured.

Of bottles, the most convenient are those graduated with

ounce marks, since they may be filled to the desired mark without other measuring. They should be, if procurable, straight-sided, with rounded bottoms and wide mouths, as these are the easiest to keep clean.

The rubber nipples should fit immediately upon the wide neck of the bottle. No tubes are to be permitted; they are only secreters and harborers of dirt.

The nipples should have as small holes as the child can draw the liquid through without fatigue. Dr. Holt suggests holes "large enough for the milk to drop rapidly when the bottle is inverted, but not so large that it will run in a stream." The writer often finds it most convenient to pick out unperforated nipples and perforate them with a fine needle until the desired flow is obtained. Plain black rubber nipples are the best. Some prefer the conical shape, but the slightly bulbous ones seem to give less trouble to some children, and as the nipple is turned inside out in cleaning there is really no choice as regards cleanliness.

The bottles and nipples are to be cleansed thoroughly with hot water and soap or soda (any good washing alkali will serve), and then well rinsed in clear water. It is best that they be boiled before using. Afterward, immediately after each using they should be thoroughly rinsed and cleansed by means of hot water, soap or an alkali, and always sterilized by boiling before being filled. It is a good plan to keep the bottles between the time of cleaning and sterilizing filled with water, as this prevents any overlooked matter from drying on the glass, which then might be difficult of removal. Nipples are also to be rinsed carefully inside and out after using, and kept in a cup or bowl of a solution of borax or boric acid in water, say a teaspoonful of either powder to a half pint of water. For cleansing bottles a bottle-brush is necessary.

An accurate measure for milk and water is necessary. The druggists' graduate is the most convenient one, but if it be not easily procured any glass can be utilized by filling it with water measured in a tablespoon—it being remembered

that a tablespoon holds half an ounce—and this glass of known capacity be kept as a measure. For measuring milk-sugar the most convenient contrivance is a druggist's pill or powder-box, carefully trimmed until it will, when even-full, hold just one ounce of milk-sugar.

THE SEPARATION OF CREAM

All the required utensils being ready, a quart bottle of the best obtainable milk is provided, and is placed in the refrigerator while the cream rises, so that the top-milk already spoken of may be used. At the end of six hours sufficient separation of the cream has usually taken place. If from the quart the upper third be carefully taken it is probable that, if the milk has been of good quality, the top-milk would have a fat percentage of about ten. If the upper eight ounces were taken, the fat percentage would be still higher, and if only the top six ounces be taken it is pretty certain to contain as much as twelve per cent. of fat. With all these various fat percentages the proportion of proteids and of sugar and salts will vary very little from that of the milk itself. The process of raising the cream has given us practically only a superfat milk.

VARIOUS MIXTURES

If it be desired to give the two-months' baby a mixture containing, say, three per cent. of fat, six per cent. of sugar, and one per cent. of proteids, which would in fact be about what a good physician probably would propose, how is this accomplished? The six ounces of top-milk we assumed to contain twelve per cent. of fat, four of sugar, four of proteids. If to it three parts, or eighteen ounces, of water be added, the desired twenty-four ounces of mixture is gained, which will contain three per cent. of fat, one per cent. of sugar, one per cent. of proteids, and a proportionate dilution of the salts. To bring up the sugar value to the six

per cent. aimed at, the difference, five per cent., must be added as milk-sugar, or, in its absence, as white cane-sugar. Five per cent. of twenty-four ounces is one and one fifth ounces. This amount, therefore, is to be added to the mixture and dissolved. Two things are yet to be corrected—viz., the amount of salts and the acidity; for while breast milk is alkaline in reaction, cow's milk is nearly always acid, and as it comes to the consumer practically always so, this reaction can be changed by the addition of lime-water, five per cent. being usually enough, and at the same time the lime-water in a large degree makes good the deficiency of salts due to the dilution of the top-milk.

Similarly, if it were desired to give to a child of seven months forty ounces of food, which should contain, fat, four per cent., sugar, seven per cent., and proteids, two per cent. (that is to say, the equivalent of a pretty rich breast milk), it would be most easily made by diluting with an equal volume of water twenty ounces of top-milk, which should have an eight-per-cent. fat value. Such a milk can be approximately procured by taking the upper twelve ounces from a quart of milk, and the remaining eight ounces necessary from two thirds of a quart set to raise the cream in another bottle. Or the whole might be set in one proper, well-covered vessel. After dilution, the sugar value would be two per cent., and five per cent. of milk-sugar would be again necessary; in this case, five per cent. of forty ounces, or two ounces. Lime-water is to be added as before.

These methods have to be varied indefinitely for different ages, different children, different conditions. Whenever medical guidance is obtainable, it is safer to follow it. When it cannot be had, the mother should remember that it is safer to use a dilute food, and give more of it if necessary, than to burden the digestion with too heavy a mixture.

In all mixtures the water used should have been boiled, unless the food is to be sterilized.

It is a disputed point whether or not the use of barley-

water as a diluent instead of simple water renders the curds formed in the digestive organs less hard and tough. Nevertheless, the belief that the various cereal waters or gruels do have this action is quite general, and there is, in the writer's judgment, no objection to their use, and possibly some advantage therein, if they be used thin enough to be diluents only. The objection to thicker gruels is the amount of unchanged starch which they may contain, which is beyond the digestion of quite young infants. This difficulty it is proposed by some to remove by first converting the starch by some diastatic substance.

FEEDING CONVENIENCES

It may be proper to here mention one or two conveniences in the preparation of the food. The first is a dipper contrived by Dr. Chapin for removing the cream or the milk, or both, as desired, from the bottle without mixing them. It consists of a little tin bucket with an upright handle of stout wire. The dipper holds an ounce, and can be thrust into the mouth of the bottle to any desired level and withdrawn full with very little disturbance of the contents of the latter. By its use any desired number of ounces may be removed from the bottle. Without such a contrivance the cream must be removed with a teaspoon, the bottle being slightly and gradually tilted to allow the use of the spoon. A better way is to use a glass siphon to remove the milk from below until only the desired amount of top-milk is left in the bottle. Where milk is set to rise in a pan, the latter should be covered, a measured quantity only of milk being in it. From the top the desired number of ounces can be easily skimmed or dipped.

The other contrivance is a sort of measuring-glass, upon the different sides of which are blown marks showing the amounts of the various ingredients of modified milk mixtures in common use at different ages. If it be kept constantly in mind, as has been before insisted upon, that neither these nor any

other mixtures are fixed, but tentative, the apparatus will be found convenient in the mixing of food. The effects of a food mixture, however and by whomsoever mixed, are to be watched, and its proportions retained or altered according as the mixture seems to meet the requirements.

Whatever the mixture that has been mixed, it is divided into the requisite number of sterilized bottles, each containing the amount of food intended for one meal. If a child well along in its first year requires more food than one nursing-bottle will hold, the amount for one meal may be divided between two bottles. But a bottle once opened for use must not be "warmed over." Thus, if a child requires twelve ounces at a meal and eight-ounce bottles are the largest obtainable, it is better to put six ounces into the bottles and to use two than to use one bottle and part of another, keeping the other part to eke out the next meal.

If the food is not to be sterilized, the bottles should at once be tightly stopped with absorbent cotton and placed in the ice-box. When one is needed it is taken from the ice-box, placed in warm water until the food is blood-warm, when the stopper is removed and the nipple is placed upon the bottle and the food given. It is better to hold the child while it takes the bottle, or at least to hold the bottle so that the food shall be always at the nipple-end of the former, and the child not be sucking upon an air-chamber instead of its food.

STERILIZATION

Shall the food be sterilized? Sterilizing in the full sense is done by raising the contents of the bottles to the temperature of boiling water—212° F. Pasteurizing is the name given to sterilizing at a lower temperature—167° F. ordinarily. Food may be sufficiently Pasteurized for safe-keeping for a day at still lower temperatures. Various sterilizers and Pasteurizers are in common use.

If the food be promptly made from a milk answering the requirements of "clean milk," already discussed, all the

manipulations being quickly done with every precaution and the food kept on ice, it is likely that, under ordinary circumstances, sterilization is unnecessary and, if so, undesirable. But in all cases where any doubt exists as to materials, methods, or surroundings, it is far safer to Pasteurize or, if necessary, sterilize the food. If one of the well-known forms of apparatus be procured, full directions are given with it. In the absence of an apparatus, any culinary steaming utensil may be used for sterilization.

One thing should be mentioned. If food is to be sterilized, the lime-water should be added to each bottle after and not before the steaming, as in the latter case a change takes place, somewhat discoloring the mixture.

Other admissible foods during the latter part of the first year are certain preparations made from cereals and from meat. The word admissible is used because it seems to the writer that during the first year they are not really called for in health. In cases where casein cannot be digested or for any other reason milk must be temporarily set aside these preparations are useful. In many other cases they seem acceptable to the child. Nevertheless, the ordinary occasion for their use during the first year, so far as the writer's experience goes, is that for some reason the mother thinks the baby "ought to have stronger food." Although these articles in any form which an infant can digest are not comparable in nutritive value to milk, they do for some reason appeal to the imagination as stronger food.

GRUELS

The forms of cereals permitted are decoctions, the best known being barley-water or oatmeal-water or gruel or, formerly more than now, arrowroot gruel. The latter had great repute in bowel troubles for young and old, but at the present time the barley and oatmeal preparations are in general use. Receipts for gruels very acceptable to adult invalids are found in most cook-books, but the oatmeal or

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barley-water used for mixing with the infant's food must be considerably thinner than these preparations if the first experiments in the digestion of starch are to be made at the age of eight or nine months. The making of barley-water from the whole grain is so tedious a process that it is better to use some good preparation of barley, in flour-form preferred. If none can be readily procured the cleansed grain can be ground finely in a coffee-mill, which should of course be first freed from all traces of coffee. Of these finely ground preparations about three teaspoonfuls should be boiled for at least a quarter, better a half, of an hour in a pint of water. The liquid is then strained through a fine strainer, preferably a cloth. It is used as a diluent of milk instead of an equal bulk of water. Oatmeal is supposed to be more laxative than barley, and is used for gruel in cases of constipation. The various previously cooked preparations of oatmeal on the market render the making of the gruel easier than it formerly was. Time is gained if even these are ground as recommended for barley. In cases of emergency a gruel can be made from oatmeal porridge by boiling a tablespoonful of it in a pint of water and straining as before.

Gradually the strength of these gruels is increased by the use of a larger amount of the cereal to a given amount of water.

BROTHS AND MEAT JUICE

The meat preparations admissible are broths, beef-tea, and beef-juice. They differ in food value, as well as in the uses they are best adapted to. Thus, in beef-juice or in beef-tea a larger percentage of proteids will be found than in broth, but inasmuch as in making broth or beef-tea the amount of liquid obtained is much larger than from squeezed beef, the total amount of proteids obtained from a given piece of meat would be best if the beef-juice method be employed. There are, however, in all meat preparations, such as those mentioned, a group of substances called extractives, to many

of which names have been given, the most familiar being creatin and creatinin. To these substances is due most of the agreeable odor and taste of meats. They are not nutritious in the ordinary sense of that word, but they do have a peculiar effect which may be described as stimulating. Every one who has kept a cat or dog has probably observed the exciting effect of meat diet, if given in large quantity, as compared with an equal amount of nutriment from bread, vegetables, or even from milk. Chemists tell us also that these extractives seem to prevent waste, while they do not repair it. These facts hint at the condition under which the meat preparations are useful—when, namely, the appetite for milk flags or a stimulant seems called for. When considered as nutriment, these meat preparations and, above all, meat-juice, are not economical, as compared with other foods. On the other hand, the meat-juices, owing to the greater amount of extractives in them, are the most stimulating. The amount of juice obtainable from a given weight of meat will vary with the piece, the juiciest giving not more than one fifth of the weight of the meat, and often not more than an eighth can be obtained. In the latter case a half pound of meat will give about two tablespoonfuls of juice. In beginning its use in the first year, not more than half a tablespoonful should be given at first, and only once a day. If well borne it may be increased gradually, but carefully.

It is to be understood that what is said of meat includes several kinds, especially those in common use for children's broths—beef, mutton, and chicken. For squeezing, beef is most convenient, as also for the more concentrated "tea." For making broth, however, mutton and chicken are quite as valuable and give a variety, which later on is more desirable than at the age we are discussing.

THE SECOND YEAR

In the second year, and indeed for some years afterward, milk must remain the chief article of a child's diet. While

some physicians advise that a child a year old should have whole milk, and while it is true that some children can at that age digest it, nevertheless the writer is convinced that it is not, as a rule, wise to give it. In fact, so far as his experience goes, a year and a half seems a better time than earlier to cease the dilution of milk entirely. He believes that it will be found more judicious to give a larger quantity of diluted milk, if it seems to be required, than to unduly hasten the increased proportion of proteids, as must be the case if a diet of whole milk is given too early. Now, if it is borne in mind that the progress is from a food of high sugar and low proteid values, to represent breast milk, toward cow's milk, which contains nearly equal proportions of sugar and proteids and, if of good quality, of fats also, it will be at once seen that we have still to dilute the proteids with some water and to bring up the other solids by the addition of some cream and some sugar. The proportion of proteids, probably at twelve months, should have gone up to about three per cent., while the fat may have come down nearly to the proportion of cow's milk, and the sugar nearly as much—let us say four per cent. for fat and five per cent. for sugar. The desired proportion of proteids (three per cent.) could be easily obtained by adding one part of water to three of milk, but inasmuch as the cream with which we shall restore the fat value contains proteids, we must allow for this by the first use of more water—say one part of water to two of milk. This has brought the proteids down to about 2.7 per cent. The addition to this of about one ninth part in bulk of good, hand-skimmed cream (fifteen to twenty per cent., according to the dexterity of the skimmer) will bring up both proteids and fat to the desired figures. Now, as it is probable that our yearling will desire about ten ounces at a meal, the above proportions would call for six ounces of milk, three of water, and one of the hand-skimmed cream. If separated cream be bought it can be had of sixteen per cent. strength at

laboratories and at some dairies. The mixture is still short of sugar, the ten-ounce meal requiring about two drams (one hundred and twenty grains) to raise it to a five-per-cent. sugar strength. In default of scales, a level dessertspoonful or two level teaspoonfuls will give this amount accurately enough.

Such a mixture is gradually approximated to the strength of pure milk by diminishing the amount of water, cream, and sugar in the ten-ounce mixture and making the remainder of it of whole milk until no modification is deemed necessary.

THE FEEDING OF OLDER CHILDREN

Of course, the milk or the mixture must still be given blood-warm, or at the very least the chill must be taken from it. Milk at refrigerator temperatures is unfit for young children. As has been already mentioned, the number of feedings in a day (twenty-four hours) is usually to be reduced to five by the age of nine or ten months, certainly before the end of the first year. The amount of food taken at a meal will during the second year be gradually increased from eight to ten ounces—if, indeed, the increase has not been begun before the end of the first year. The daily amount of milk food will therefore be gradually increased from forty to fifty ounces. But it must always be remembered that whenever a meal includes other articles of food the amount of milk at that meal must be proportionally diminished, especially if the additional food be of animal origin (meat, eggs, etc.). Experience has shown that the evening meals are best borne if rather light, hence increase or changes in diet should not be made after midday, and probably, from convenience rather than from any hygienic reason, the middle meal of the day, rather than an earlier one, is usually the one at which the articles of food other than milk are given, and is often called the baby's dinner. A little later suggestions will be given as to feeding schedules.

DIGESTIBILITY OF FOOD

As new articles of food are introduced into the dietary, it is well to keep in mind the objects of each one—that is to say, to remember that it is still, and will always be, necessary to keep a proper balance between the nutritive elements—the proteids, fats, carbohydrates, and salts—in the food given. Their relation to the milk given is a part of this consideration. The nutritive value is not the only criterion of food; digestibility is, in childhood at least, scarcely less important. The articles of food besides milk admitted to the dietary of the second year are usually meats, eggs, cereal porridges, bread and butter, and fruits. From the meat and eggs proteids and fats are obtained. The porridges and bread are very largely composed of carbohydrates in the form of starch, changed or unchanged, but oatmeal and whole-wheat flour contain considerable proteids. Butter is practically all fat, while fruits furnish mainly sugar and salts. Salts are present in nearly all articles of food.

THE CHEWING TEETH

During the first half of the second year the child is getting its first molars, without which it can do no chewing, and, as before stated, its milk food is approaching the composition of whole milk. Until it can chew the child can rarely digest any solid food. Hence the additions to the milk diet must practically consist of the meat-juices and broths already spoken of, and gruels from which all coarse particles are strained out.

MEAT AND EGGS

With the completion of this first half of the second year the chewing teeth are probably present, and the power to digest starch and flesh is in some degree gained. This power of digestion does not, of course, depend upon the presence

of the teeth, but these two stages of development do on the average coincide sufficiently nearly to allow us to infer the one from the existence of the other. Hence at eighteen months we may venture to give meat and eggs. Since the art of chewing has not been learned, the meat, beef or mutton, must be carefully scraped from the pulp of a piece of rare-done steak, chop, or roast, all tough fibers being discarded. A good teaspoonful of juicy pulp is enough to begin with, and a tablespoonful should be the limit of a day's ration during the second year. If the child seems to digest the meat well, an egg may be tried. It should be really fresh and lightly boiled and slightly salted. Of course, the meat and egg cannot be given on the same day, and the latter should not be given oftener than twice a week, so that its acceptability to the digestion can be noted. With the meat or with the egg it is best to give some bread. Children usually like bread-crumb with meat-juices or eggs. Whether for crumbing or for eating with butter, the bread should be distinctly stale, or it may be dried to the condition of "oven toast"—*i. e.*, a thin slice of bread placed in the slow oven until it assumes a golden-brown color. Until the chewing art is fairly obtained, the greater part of the bread would better be crumbed. The child can learn to masticate the mixture of crumb and scraped meat or crumb and egg without danger of large pieces being swallowed.

ZWIEBACK AND CRACKERS

Zwieback is much used for children in place of bread. It is preferable to fresh pasty bread, but so far as we can see has no advantages over the "oven toast" above-mentioned, save that it is ready-made. This is a doubtful advantage. It has the disadvantage of being usually sweetened. Being ready-made, it would better be heated in the oven before serving, a remark which also applies to most crackers or biscuit.

These crackers are also much used for children, probably

originally from convenience, in many families in which the bread-making art was not well developed and the hot-bread habit well established. Of the many kinds of biscuit or crackers in use, a few are wholesome, more undesirable, and some objectionable for children. Those made of whole wheat are best, as they have other elements of the grain beside the starch. A biscuit of this type much sold in the Eastern States is called the "Educator Wafer." In choosing from those made of white flour, those which are light, free from grease, and free from sweetening are to be selected. They should be firm enough to require quite a little chewing, and not hard enough to be beyond the child's chewing powers. Thus, soft powdery crackers, which are simply moistened with a little saliva and swallowed or washed down with a gulp of water, are objectionable on the one hand. The very hard water-crackers or educators (not the "wafer"), although very desirable for adults are, on the other hand, for young children too difficult eating. Sweetened biscuits are objectionable, partly because, in this country at least, most children eat a very unnecessary and undesirable amount of sugar, and still more because a habit is begotten which leads children to refuse all food which is not distinctly flavored with sugar or in some other way.

GRUELS AND PORRIDGES

In connection with the bread we may mention cereal preparations. Porridges as prepared for adults are rarely within the digestive abilities of a child under two years of age, and the coarser particles should still be strained out and the mixture thinned with warm milk to a gruel-like consistency and seasoned with salt. Neither gruels nor porridge, in the writer's opinion, should ever be eaten with sugar. When the starch-converting power of the digestion is developed sugar enough is manufactured from the starch that is taken in bread, cereals, etc. Before that time milk furnishes sugar enough for the child's wants, and most of

the coarse parts of the porridge containing starch are strained out. Most of the porridges given to children with sugar sprinkled over them are more likely to do them harm than good.

FRUITS

Fruits are useful as laxatives and, through the salts they contain, as preventives of scurvy. In case of the existence of that disease, the juice of an orange may be given (usually under a physician's direction) at any age. But as a food for a child needing no treatment it is permissible very early in the second year, sometimes still earlier. It hardly need be said that it is not to be given with milk, nor while milk is still probably in the stomach, so that it will need to be given in an interval between milk meals, say when the interval is two thirds gone, or it may be given with the meat and bread meal, as a dessert, if no milk is taken. By the age of eighteen months some cooked fruits are permissible, and if constipation exist probably desirable. Those most generally procurable of the suitable sorts are apples and prunes. The apples should be thoroughly baked or stewed, with as little sugar as will correct an acid taste. The pulp should be carefully strained, or, in the case of the baked apple, carefully fed to the child with a spoon by the mother or attendant. Prunes must be very carefully cooked and sifted. The writer believes that in season the pulp of thoroughly ripe and fresh peaches is one of the safest forms of fruit.

POTATOES

It will probably be noticed that the potato has not been mentioned among the articles of diet in the second year. This is because, in the writer's experience, it seems better deferred until the completion of dentition, or until the end of the second year. Many children are given potatoes to eat much earlier, often before they are eighteen months old, and very likely some children can digest them in the second

year. Nevertheless, the writer feels justified in advising their postponement until the end of this year. Whenever they are given, they must be baked or roasted thoroughly, lightly broken up with a fork, properly seasoned with salt; upon them, in addition, may, if desired, be put cream or beef-juice. Butter upon a hot potato is not advisable for young stomachs any more than melted butter elsewhere.

THE FIVE MEALS

The changing of the kinds of food has thus gradually converted the five bottles which constituted the diet at the end of the first year into five meals, which will continue for some time to come. These meals may be denominated as:

The rising meal, usually	6.30 to 7 A.M.
Breakfast (or the after-bath meal)	9.30 to 10 A.M.
Dinner	12 M. to 1 P.M.
Afternoon meal or supper	3.30 to 4 P.M.
The bed-meal	6.30 P.M.

The rising meal is usually a bottle of milk or a cup of milk with bread or cracker. The bed-meal should be a small one of milk. Breakfast is the meal at which the cereal is introduced with milk. The afternoon supper is very similar, but bread or toast is more commonly used, as cereals are sometimes inconvenient to prepare twice a day. The dinner or midday meal is that at which the meat juices, broths, and scraped meat are introduced, as well as any of the admissible desserts spoken of.

Of course, at any meal where bread is given with milk, the former, stale, should be broken into the milk, but the child should be taught to chew the bread and not swallow the softened mass immediately upon putting it into the mouth.

FEEDING AFTER THE SECOND YEAR

With the opening of the third year, if the child be a good eater, it may be desirable to unite the supper and the bed-

meal, the forenoon and midday meal being made proportionately later, say 10:30 to 1:30 respectively. If the child be not so good an eater or one of those who does not readily go to sleep when put to bed, the fifth meal, in the shape of a cup of milk, may be continued for a while. The four-meal schedule once adopted is generally continued until perhaps the sixth year. Its interruption seems to be brought about not so much by any hygienic theories, or even by the second dentition, as by the exigencies of school life. Even then a snack at recess is often provided for. In England even adult laborers, at least in some districts, adhere to a meal variously known as a "tenner" or "elevener," from its customary hour.

GENERAL RULES FOR DIET

More important than the precise number or hours of meals is regularity in regard to the number and amount. Between these adopted hours there should be no eating. "Between-meal" eating and "tastes" of adults' meals should be strictly forbidden to children. On the other hand, it is unjust to take them to table with their elders, who are eating savory articles of food which they cannot be allowed to have. It is better that the child have its meals by itself until it can share with propriety the meals of its elders or can understand that there are reasons for its being denied.

The child should be allowed plenty of time for its meals, but should not be allowed, however, to dawdle over or play with them. It should not be forced to eat when it evidently does not desire to do so. It should be taught to chew its food carefully, but should have food given to it which it can chew without fatigue. When the child has had enough, let it stop eating, rather than try to stimulate its appetite by giving unsuitable dainties. This is not intended as a forbidding of palatable, well-cooked, and properly seasoned food, for palatability is a great aid to digestion. But it is intended to prevent the very common false method of feed-

ing children, which results, to use a country phrase, in their being "cake hungry but never bread hungry."

Rules for diet and hygiene are generally arranged for states of health. When a child is ill, the physician in attendance will specifically dictate the food. In minor cases of illness or of indisposition the great rule is to diminish the amount of food and make it more easy of digestion. So far as milk food is concerned, this is easily accomplished by simple dilution. In regard to other food, in a general way it may be said that solids are to be set aside, or, if used, only the more digestible ones.

In warm weather the appetite is generally less than at other times in adults, and thus the proper diminution of the amount of heat-producing foods is accomplished. Children need some oversight in this regard. Usually the amount of food necessary is less, but it is to be borne in mind that an infant on liquid food may in hot weather take an undue amount from thirst, and that it would be quite as contented and much more comfortable if given occasional drinks of water and less food. Again, it is to be remembered that older city children, at least, are much more active in out-door play in summer than in winter, and for this reason may demand an increased amount of food on that account which will offset the diminution which should be made on account of warm weather.

It is also to be remembered in determining the amount of food at any time that it is no question of how much a child may be able to eat, nor in selecting food should we ask, Can the child eat this or that thing without evident injury or prompt discomfort? But the question is, Will this amount of this kind of food be of advantage to the child? And whenever doubtful indulgences are considered one must reflect whether harm may come from them, either through remote indigestion or the causing of dissatisfaction with simpler and more wholesome food. Too often impulse or laziness, rather than deliberate thought and experience, decides the matter.

THE THIRD YEAR AND THEREAFTER

From the beginning of the third year, or that part of it when the teething is complete, until the beginning of second dentition there is a gradual increase of the variety, as well as in the amount of food. But it is never to be forgotten that the dietary is by no means that of an adult. Out of the immense variety of articles of food and of methods of preparing them suitable for the latter, only a small part can be wisely permitted to children.

Of the various groups of food—flesh, fowl, and fish, with eggs and milk, vegetables and cereals, fruits and garden produce—we shall point out below those which we consider really desirable. Of those undesirable not many will be mentioned, chiefly those which, while objectionable, are from some error often given to children.

"ANIMAL FOODS"

Of milk, so much has been said that no detail need be again gone into. It usually forms a considerable part of a child's dietary until the second dentition begins, and during the third and even the fourth year it is the main reliance. From meals which include other proteids—meat, eggs, etc.—in any considerable amount, milk is as well omitted, or, if used, it should be in less quantity.

Cream, when no longer added in milk modification, is still very useful. Its great uses are as a laxative article of food, and as a more digestible form of unsalted butter, although it does still contain some proteids. Like butter, it can be used to increase the palatability or the "richness" of food, and of itself makes a harmless sauce to many articles otherwise dry.

THE VALUE OF EGGS

Eggs are very rich in protein and fats, their protein value being not much behind that of an equal weight of good steak. They form a useful change in the third year and

afterward, but should be given only occasionally in the earlier years, certainly not daily, lest—if for no other reason—an inconvenient dislike on the part of the child be engendered. It is also wise to have an interval between the days on which eggs are given, so that if any idiosyncrasy regarding them exists it may be the more readily detected. It is probably these occasional personal peculiarities which have given rise to the popular dictum that "eggs are bilious." They should be given only soft-boiled or poached—*i. e.*, dropped into boiling water—and for these purposes only the very freshest eggs are suitable. If really fresh eggs cannot be obtained, the child will be better without them.

VARIOUS MEATS

Of the great variety of meat foods, very few are suitable for children. All salted or smoked meats, all game, all preparations of meat—such as sausage—intended to be eaten uncooked are at once set aside. The choice as to "butchers'" meat is practically only between beef and mutton. Veal is quite unsuitable, and lamb, unless we use the word as a complimentary name for young mutton, is not nearly so digestible as the mature meats. The writer believes that this is true of all flesh of immature animals. Pork is the most indigestible of all meats usually sold. Bacon, it is true, is far more digestible than other pork food, but this advantage is generally more than destroyed by cooking the meat to crispness, in which state few young children can digest it.

Beef, then, in the form of steak or roast beef, and mutton roasted, boiled, or as a chop, constitute the child's variety of meat. Mutton is the more digestible of the two, but for some reason this fact seems to be less well known in this country than formerly. The meat should be cooked to the condition known as rare—that is to say, cooked beyond the blue stage, so that its juices run freely as it is cut, but still red, and not brown, in the interior.

Of poultry, only the fowl and the turkey are permissible,

and in the earlier years only the white meat of the bird. Young birds are more tender than old ones, but they should be fully grown. They should be thoroughly cooked. The flesh of ducks and geese have no place in the nursery.

The same may, as a rule, be said of parts of animals used as food for adults, such as liver, kidneys, and the like. Both tripe and sweetbreads are digestible, but as usually cooked their digestibility is destroyed, and in any case their use in the nursery should be forbidden, unless they are thoroughly and simply stewed and served without sauces, in which case they are often insipid.

Made dishes and hashes must likewise be disapproved of, because they are, as a rule, made of the less desirable parts of meat previously cooked and served. They are also usually overseasoned and overdone. A fine mince made from previously uncooked meat or carefully made from good parts of a roast and not unduly seasoned or sauced may sometimes be given in an emergency.

It seems hardly necessary to call attention to the fact that nothing intended for nursery food is to be fried. Even skilful frying in the fat kettle is undesirable, and too many American cooks have too far forgotten this art to make it safe to admit frying at all.

FISH AS FOOD

Fish for young children should be only of a few digestible kinds, and should be particularly fresh and sweet, even more so than if for the use of adults. This requirement of freshness restricts the use of fish considerably, since in the winter in many places fish can be had only after it has been kept a long time on ice. Fish which are very fat are not very digestible, hence the tribe of mackerels, including the bluefish, and some of the herrings are pretty strong for a child's stomach. The same is true of the eel, as well as of the salmon. The cod, when young and in season, the haddock, the halibut, the striped bass, have all white flesh which is nutri-

tious and digestible, and the fish is large enough to give good pieces for boiling or broiling, the only ways in which fish should be prepared for children. The flesh of the large flounder, sometimes called plaice, is good boiled, but rather dry; that of the squeteague, or weakfish, is good broiled, but too soft for boiling. It is a fish which preëminently needs to be used very fresh to preserve its flavor. The black sea-bass of Northern markets and the tautog (called blackfish in New York) are both good fish. Southern markets have many excellent fish, but they are not so good for children's use if transported. Of fresh-water fish, few are marketable far from the place of their capture in a condition suitable for the nursery table. The best, when fresh, are the trout, the whitefish, the yellow perch, and young pickerel. Black bass from clean waters, the white perch, and perhaps the pike perch may be admitted. The objection to most of these fish is their size, which makes them too small for boiling and often for broiling. They are therefore usually fried, which, as has been said, is not a good method of cooking for young children.

Salt fish and smoked fish need only be mentioned as undesirable. They are too difficult of digestion.

Boiled or broiled fish must not be served with fat sauces. Broiled fish must not be buttered in broiling. A little salt put upon them some time before the broiling improves the flavor. For boiled fish no sauce, or the simplest cream sauce only, can be allowed.

Shell-fish need but a word. Except the oyster, none are fit for the nursery, and even this excepted one is rather an indulgence than a desirable food for children. It can be given only stewed. It makes, however, one of the many broths which are now permitted. Oysters give an agreeable flavor to the milk and other ingredients in which they are cooked, even if the oyster itself be not eaten. Clams may be used in the same way, but the broth must be strained to get rid of the clams themselves, which are quite unsuitable for children's food. These broths are very appetizing, but

their nutritive value is largely in the milk added, as well as in the cracker or flour thickening, if any be used.

SOUPS

Broths or soups of various sorts, besides those before described, may be allowed to children, but they should be plain. Most soups into which vegetables enter require to be strained, so that the latter may give flavor without the more or less indigestible substances. The potato soup, if well made, is an exception, the vegetable making an excellent purée. Soups of meat can be made more nutritious, as well as varied, by the addition of rice, barley, or vermicelli or Italian paste. In making soups for the nursery it is to be borne in mind that they must be as nutritious as practicable, but digestible certainly. No so-called rich soups are permitted, because nearly always the "richness" is due not to nutrients so much as to indigestible additions.

VEGETABLES

The *potato* has already been mentioned as the first vegetable allowed to children. It continues through childhood, and through life in fact, the most generally useful of vegetables. During the whole of the period which is under consideration—*i. e.*, until the beginning of second dentition—it should still be given baked. Boiled, it is as a rule less light or "mealy." Stewed, it is of doubtful propriety, and fried or sautéd, it is distinctly objectionable. *Sweet potatoes* are less desirable, as a really mealy one is not very common, even the best having an adhesiveness far beyond that of the best white potatoes. If given at all, they should be baked and given only to children over five.

This objection of toughness and indigestibility is still more pronounced against the immature white potatoes sold as "new potatoes." However palatable they may be, they must be denied to young children. This, however, does not

apply to the fresh crop of mature potatoes. The white potato has the advantage of being available throughout the year.

During the season of fresh vegetables there are a number which are wholesome even during the third and fourth year. The choice of winter vegetables is more restricted.

Two or three things may as well be first mentioned. First, a young child should eat no uncooked vegetables. All vegetables should be thoroughly cleansed before cooking, all imperfect parts being discarded. Most vegetables, if boiled, lose less of their value and flavor if the water be slightly salted. Lastly, and perhaps most important, all green vegetables must be eaten while quite fresh, or their advantages as articles of food are doubtful. The effect of each article upon digestion should be watched. Among the tenderest and most digestible of the summer vegetables are asparagus, peas, and string-beans.

Asparagus-tops cooked very tender, served without sauce or with cream only, are usually digestible in the third year. The odor communicated to the urine by the vegetable is disagreeable, and sometimes causes alarm to those mothers who had not previously noticed it.

Peas should be given only when especially tender. No amount of cooking can make an old tough pea soft. In fact, it is claimed that they grow harder in boiling, and they can hardly be less refractory to digestion.

String-beans must be equally tender and be well cooked and well chewed.

Some varieties of beans eaten without the pods may be given if tender and thoroughly cooked. But it is to be noticed that they vary, and even different messes from the same source vary very greatly as to tenderness, and unless the mother can make a daily test of this they are better not given. Tough beans are among the most indigestible of fresh vegetables. Dried beans in the form of baked beans, while a very nutritious form of food, are not within the digestive abilities of most children of the age of

six or under. But in the fifth or sixth year a well-made bean or pea-soup may agree. Peas and beans contain such a large amount of proteids as to quite equal, pound for pound, the best lean beef, besides much starch. When the fat of pork is added it is evident why the combination is of such high repute as a food. Nevertheless, children, as well as adults of feeble digestion, would better not try such heavy food.

Of the vegetables which can be had in good condition later in the year we may mention the onion, cauliflower, and spinach.

The best *onions* are called Spanish or Bermuda, their flavor being less harsh than others. For the nursery they are to be boiled or baked, the former being, in the writer's judgment, preferable. They must be cooked until thoroughly tender. They are acceptable without sauce, but if sauce be desired it should be of cream, not melted butter.

Cauliflower is the only plant of the cabbage family which should be allowed to young children. It should be boiled and served in the same manner as directed for onions, but it is not an easy vegetable to prepare properly for the nursery.

Spinach, in the form of a purée, is one of the stand-bys of the nursery table in winter. What has been said about cleansing and boiling of vegetables applies emphatically to spinach. For children it must be put through a sieve or a fine colander. It should not be given in the rustic form of "greens." Like the onion and perhaps the cauliflower, it is accounted slightly laxative, but it cannot be charged, as they sometimes are, with causing gas. It is said to contain an appreciable amount of iron, which makes it valuable in the dietary of winter and spring.

The quantity of all these vegetables must at first be small, a single onion, a dessertspoonful of cauliflower or of spinach, for instance, and gradually increased if found to agree.

Celery, carefully prepared by boiling or prolonged stewing until thoroughly tender, is an acceptable vegetable, but

its nutritive value is not great. Of the vegetables known in common speech as "roots"—turnips, beets, carrots, parsnips, etc.—few are tender or digestible enough for young children.

The *beet*, if it could be gotten tender and thoroughly cooked, might be useful, but in practice the writer has rarely found it properly prepared, and has been obliged to conclude that the toughness of the vegetable is not properly appreciated in the kitchen.

The *carrot*, to be allowable, must be very thoroughly cooked and put through a sieve, and it is doubtful if its acceptability to the childish palate and its nutritive value are sufficient to repay the trouble. The vegetable is mentioned only as a resource for occasions when something with salts in its composition is needed and nothing better is at hand.

The question is sometimes asked, Are canned vegetables proper for use in winter? The answer depends upon the quality of the vegetable. Some kinds of vegetables preserve their original qualities well, some do not, and of the former the wares of one factory may be good and tender, those of another stale and tough. In many places the alternative is to use canned goods in the winter or to go without green vegetables altogether. In other places the best canned vegetables seem to be really better than those brought from a long distance in cold storage. No fixed rule, therefore, can be made. Each article must be judged by itself. There are, for instance, canned peas in the market as tender and nearly as palatable as those freshly picked; there are others which are burdensome even to an adult stomach. In every case of doubt err upon the safe side, and refuse to give the vegetables to the child.

BREAD AND CEREALS

The directions given for their use in the second year are still valid. No fresh breads should come into the nursery. Bread should be at least a day old, and the whole list of biscuits, muffins, etc., are tabooed. All the ordinary cereal

preparations, if well cooked, are permissible and for the most part desirable. Oatmeal is a standard. Wheaten preparations, of numberless trade names, preferably those not of the coarsest sort, are excellent, especially as a change from the oatmeal or when the latter seems to be the cause of skin irritation, as it occasionally does. There is also a long range of preparations of Indian corn, such as Indian meal, farina, hominy, and, for those children old enough to chew well, samp and hulled corn, meaning that hulled by machinery; that hulled by the use of alkalis can be given only if very carefully washed free from the alkali. Rice is also useful. Tapioca and sago used in the adult dietary are not so desirable for children as ordinarily prepared. Their place is really as a component of nursery desserts, which should be so delicately made that the tenacity of these ingredients may be overcome.

MACARONI

Macaroni may be mentioned in connection with the cereals. Being made from a peculiar Italian wheat, the real macaroni is rich in gluten, and, while very nutritious, is sometimes tough and resistent to digestion. For nursery use, therefore, the finer kinds, vermicelli and spaghetti, are preferable. It is quite possible by careless cooking to render the macaroni a disagreeable, pasty mass. This is best prevented by keeping the water boiling while the broken pieces are dropped in, a few at a time, so that the heat shall not be noticeably checked. For nursery use it must not be served with cheese, tomato, or other relishes, but plain, with milk or cream.

DESSERTS

It is left to speak of such things as constitute suitable nursery desserts. They are not very many, and must be all rather simple. Perhaps the commonest is *junket*, otherwise known as *rennet custard* or *slip*. It is, of course, merely an-

other, and usually an attractive, way of giving milk. This should be borne in mind if the meal has contained already milk or much proteids of any sort. Similar desserts are *custards*, baked or boiled. They are equally rich in proteids, to some persons less digestible because of the egg used, and are therefore not to be used so early as junket, but are usually well borne, in moderate amount, at two and one half or three years.

Rice puddings and *bread puddings* may be given by the latter date if made simply. Very good rice puddings can be made without eggs, and, however made in other respects, should be free from the too common fault of excessive sweetness. Rice pudding is usually quite as agreeable cold as hot, but the same is not true of bread puddings. The objection to ice-cream is less its composition than its temperature. It is not helpful to digestion to take any considerable amount of very cold substance into the stomach as a part of a meal. In the third year only perhaps a dessertspoonful is to be allowed, and that should be partially softened before giving it. Only simple ice-creams should be used.

No pastries of any sort should be given, and if any cake only sponge cake or simple gingerbread. Many desserts, however, can be made from fruit, either in its natural state or cooked. The early use of oranges and of stewed prunes has already been spoken of. Both, especially the orange, remain for a long time acceptable to the childish palate. *Apples* are not very digestible uncooked, but the baked apple is much more so. They are best given baked, either alone or with cream. There are many very tasty dishes made from apples, such as "Brown Betty," and rich mixtures with jelly and cream, which are not, in the writer's belief, very digestible. As a variant, stewed apple-sauce is good. But it is to be noted that for either baking or stewing good sweet apples should be chosen, else the amount of sugar needed to make them palatable is more than is well borne by the digestion. In the third year the pulp of sweet apples may be given uncooked if it be scraped up finely with a spoon. *Pears* are

akin to apples. A very good pear is often accounted more digestible than an apple. The coarser varieties of pears can only be eaten cooked. The chief objection to the pulp of a fine pear is that in a good many stomachs it seems to excite acidity, and is therefore (for such persons at least) not desirable at a time when the dietary contains much milk.

FRUIT

Most berries are scarcely worth considering in the early years; they disturb the bowels more frequently than is compensated for by their little food value. The *strawberry* in a perfectly sound and ripe condition may be tried cautiously, however, in the third or fourth year, cautiously because there exist more idiosyncrasies in regard to this fruit than probably in regard to any other.

One of the most persistent of winter fruits is the *banana*. Quite a little popular controversy has arisen as to its digestibility. The question cannot really be discussed in the Northern States, to which the fruit comes in an unripe state to be ripened. It is also usually bought for use imperfectly ripened. So that whatever be the truth about the banana where it grows, as bought in the North it is not suitable for children under seven years. But, cooked, the writer has found it wholesome and generally liked by children. Bananas are as easily baked in their skins as are apples. The skins turn black in the cooking. They are easily removed, leaving a soft pulp rather less firm than that of a baked apple, which is very palatable without any addition, but cream may be used if desired.

Grapes come rather early into use, but for little children the seeds and skins must be removed, so that the solid pulped grapes, of which the white Malaga grape is the type, are practically the only ones which can be used.

Melons belong to the doubtful articles, because so many melons are poor. The pulp of a really good melon, whether watermelon or canteloupe, is very tender and, we believe, di-

gestible. Owing to the uncertainty of the melon's character until it is cut it cannot be ordered for the nursery. It can be given only when one of the proper quality actually appears.

The *peach* has already been spoken of.

Of dried fruits, *dates* and *figs* are sometimes given. They are of doubtful propriety unless they are cooked, as their flesh is too tenacious for children of an age at which they rarely chew anything very well.

Nuts can be only mentioned to be forbidden.

The list of foods above given has been made as long and as inclusive as the writer felt proper. Articles not mentioned are to be understood as, in his opinion, undesirable or objectionable.

WATER AND OTHER DRINKS

Of *drinks* none are proper but water. If the water-supply be of doubtful purity the water may be filtered, if a really good filter is at hand. If not, it may be strained through cotton or flannel and boiled and set aside to cool before using. Aërated waters may be given in small quantities only. Milk should be always thought of as food, although its component water makes it a quencher of thirst. Water should be very early offered to children in small quantities, as their thirst is very often mistaken for hunger. Tea and coffee are never to be allowed, and wine or beer only under a physician's specific direction. As an occasional article of diet light cocoa beverages may be used in the later years of the period under discussion. But even these are better omitted.

OBJECTIONS TO SWEETS

The writer believes that in the foregoing list of articles of food for young children he has included all that are admissible. All others being considered as usually inadmissible, no list of excluded articles is made. It is, however, perhaps necessary to make especial mention of candy and sweets as ob-

jectionable. So long as a child's diet is largely made up of milk food it gets an ample amount of sugar. Later it gets in its cereals, bread, and potato much starch which is converted by digestion into sugar. All through life in most civilized countries, certainly in our own, food is generally sweetened beyond the needs, and very frequently beyond the toleration of the average system.

IX

DISORDERS ASSOCIATED WITH IMPROPER FEEDING

IN connection with the subject of feeding it is proper to mention some disorders associated with or dependent upon improper diet. First may be mentioned rickets.

SYMPTOMS OF RICKETS

THIS disease, called scientifically *rachitis*, is a general one affecting all parts of the system, but being most striking in its effects upon the bones of the body, which, through an arrest in the ossifying process, become soft and often distorted. It is a disease which in well-cared-for children rarely reaches a pronounced degree. The striking bony changes spoken of are usually seen among the poor, and in this country most of the cases are found in the children of the negroes and Italian immigrants. The milder cases of rickets are often seen among the well-to-do, but, the early symptoms being recognized, are corrected before deformity has resulted.

Rickets usually occurs within the first two years of life, and especially after weaning or the failing of an adequate breast-supply; both too early and too late weaning may lead to improper or insufficient feeding.

The most noticeable symptoms are the following: The earliest manifestation is often overfatness, with constipation. Sometimes diarrhœa is present, or alternates with the constipation. The child perspires more than is natural, especially about the head and neck. Teething is backward.

It should be said, however, that this symptom is not alone conclusive of rickets—if, indeed, any one of the symptoms above given alone be—since family peculiarity has much to do with the time of the eruption of the teeth.

CHANGES DUE TO RICKETS

If the disease advances far enough to produce bony changes the most common are the following: The head is prominent in places, especially in the frontal and parietal bones, making the naturally rounded contours of the baby's head rather more angular or square, as is usually said. The face somewhat shares in this angularity. Often the skull-bones, on handling, are felt to be softer and thinner in places than they should be. This is usually most marked at the back of the head. The chest, owing to the yielding of the ribs, takes the shape known as pigeon-breast or keel-breast—that is to say, there are depressions at the sides not far from the line of the nipples, while the breast-bone and the middle of the chest project like a keel. This change of shape diminishes the capacity of the chest, and renders more important any bronchitis or other lung trouble which may occur, and a tendency to which may be favored by the rachitic condition. Sometimes the points where the ribs join their cartilages are increased in size, and those rows of knobs have gained the name of "the rickety rosary." The long bones, when affected, bend, making, according to the parts subjected to the pressure of the weight of the body, various distortions, among which knock-knee, bow-legs, and curved shins are the most familiar.

CAUSES AND CURE OF RICKETS

The cause of rickets is undoubtedly due to defective feeding, or feeding inappropriate to the digestive powers of the child. The exact form of unsuitableness may vary greatly, but actually the errors by far most frequently recognized

are an absence or deficiency of fat in the food and the giving of starchy food when it cannot be digested or in greater amount than can be digested. It therefore is likely to occur in infants who are given the food of adults and in those fed upon so-called infant foods, which are very starchy and deficient in fat.

The disease usually develops rather gradually, and is recovered from with proportionate slowness. Its cure consists essentially in removing its cause—that is to say, in correcting the errors in diet, as well as in hygiene, if any exist. Medicinal treatment wisely directed may also assist the cure.

INFANTILE SCURVY

Another disease, once called acute rickets from an erroneous idea of its nature, arising from dietetic error is scurvy. It is also, for distinction from ordinary scurvy, called infantile scurvy or scurvy-rickets.

The symptoms likely to attract the attention of the mother are these: The child is restless, or may be peevish, but it will generally be found that it is relatively contented if left alone, but cries if touched. It has diminished appetite, looks pale, and may sometimes have disordered bowels.

The condition of the blood is changed, and, as in ordinary scurvy, may escape from the blood-vessels in almost any part of the body. The commonest situations are in the gums, which are in that case tender and bleeding, but this symptom is not likely to occur before the teeth begin to come. "Black-and-blue spots" appear on the skin, sometimes giving the appearance of a black eye, or, if the bleeding be into the loose tissue of the orbit, the eye may protrude somewhat. A very striking characteristic is the swelling of the limbs, especially the lower, due to bleeding beneath the periosteal covering of the bone. The swelling is spindle-shaped or pear-shaped and very tender to touch. More rarely blood escapes from the bowels or with the urine. Occasionally, in connection with the periosteal bleeding in the lower limbs,

the bones may be fractured. But the changes already described as due to rickets are not marked unless the child be also afflicted with that disease.

CAUSES AND CURE OF SCURVY

This disease, unlike rickets, may occur in children more carefully looked after, although not confined to them. The essential dietetic error seems to be a lack of freshness in the food—that is to say, it rarely occurs if the infant gets fresh milk as food, but much more frequently if the diet is of condensed milk or dry prepared foods. It sometimes occurs when fresh milk is the food if the milk is sterilized too long or at too high a temperature. The use of fresh food in the form of meat-juice, for those infants old enough to take it, seems to be useful both as preventive and curative.

The high value of fresh vegetables for both these purposes is well known as regards the scurvy of adults, and the same is found true in infancy. But the available kinds are few, since the disease usually occurs between six and eighteen months. Most frequently used, both because it is palatable and easily borne, is orange juice. The giving of the juice of a half or a whole orange of good size, according to the age of the child, once a day is generally followed by prompt improvement of the symptoms and by cure. The juice of grapes and the pulp of apples have also been given. In cases where fruit juices for any reason cannot be had, it has been found that fresh vegetables, such as carrots or potatoes, cooked in beef soup, impart an anti-scorbutic value to the soup, although the vegetables are carefully strained out. A very thoroughly cooked potato, beaten up into a cream with milk, may also be given to advantage; at first a teaspoonful and later a larger quantity being added to each bottle of food.

HABITUAL CONSTIPATION

Constipation is of many kinds, and may depend upon a very great variety of causes. But in popular language the

word is generally used to signify *habitual* constipation, and since in infancy this condition commonly depends upon dietetic or hygienic errors it is proper to consider it in connection with those diseases due to faulty food or feeding. If the child is suckled the constipation may depend, or at least seem to depend, upon constipation in the mother, or it may be due to a faulty composition of the breast milk. If the child be bottle-fed the usual faults of composition in the food are too little fat, with or without an excess of casein. The value of the fat as a laxative has already been alluded to. It will be remembered that in typical breast milk the percentage of fat was put down as three or four times that of the proteids. It will also be remembered that at first the percentages in the artificial food mixtures recommended were kept below those of the standard breast milk. It does seem, however, that if their relative proportion be not much disturbed the bowels keep in pretty good condition while the actual percentages are still low. As in later infancy higher proteid percentages are reached, and the proteid is chiefly casein, it is sometimes not practicable to proportionately run up the fat percentages. The digestion rebels against such an amount of fat. Nevertheless, the best results are reached through the increase of the fat percentage in the food toward, but short of, the limit of tolerance. It will, of course, be at once seen why constipation so often follows the use of patent foods, which are practically devoid of fat, some of which, however, do contain considerable dried casein.

When the child is suckled and the milk is deficient in fat it is often very difficult, with the best theoretical feeding of the mother, to modify sufficiently the composition of her breast milk. In such an emergency, Dr. Holt has suggested the feeding to the infant just before each nursing a teaspoonful or more, as may be necessary, of cream.

A number of hints concerning the subject of constipation and various digestive disorders will be found, under their respective headings, in the second part of the book.

HYGIENIC TREATMENT OF CONSTIPATION

After the first year and until a pretty varied vegetable diet is permissible—a period of about three years—a good deal of difficulty is often experienced with constipation. All through this period fats are useful. Cream is the best form, but in its absence butter and other animal fats may be used, the effect upon digestion being watched. When the laxative cereals can be eaten with cream they diminish the difficulty. So do the laxative fruits already mentioned. And the use of green vegetables or other laxative vegetable food generally enables the parent to control the condition of the child's bowels, if attention is paid to certain hygienic rules, without the resort to medicinal remedies.

It ought to be mentioned that the free use of water is as useful in many cases of infantile constipation as with adults, especially when the evacuations are very hard and dry. The water is best taken on rising, before food, not given to dilute a meal.

The hygienic considerations just alluded to relate to the posture, time, and regularity of defecation. As to posture, it hardly need be said that the natural one is that of squatting. In it, with the body slightly bent forward, all the muscles used in evacuating the bowel are in the best position for efficient action. When, however, a child is put upon its chair commode its posture is often such as to render the expulsion of hard fæces exceedingly difficult. The trunk is bolt upright, the feet dangle from a seat which is too high, and the expulsive power of the abdominal muscles is reduced to a minimum. Besides, the aperture in the seat of the chair is so wide that no support is given to the seat-bones, the fleshy buttocks are crowded together instead of separated, and the descent of the parts necessarily preliminary to evacuation is much hindered. If a child be rachitic, its difficulties are in every way increased. In all cases of constipation it is better to use a low vessel than a chair,

unless the latter be a very low one. The writer was once consulted concerning a child because it would never use its chair, no matter how long it was left upon it; but immediately afterward would go to a corner of the room for its evacuation. The poor infant could not do otherwise, for the reasons just given.

The element of time is important. The matter to be evacuated may not be in the lower bowel, or even if it be there, the impulse to expel it may not come immediately, and a certain amount of delay becomes necessary. When children are of school age this factor becomes a pretty important one in inducing habitual constipation. Time enough between breakfast and school-time cannot be allowed, and the function is forgotten until some time when it becomes imperative. Therefore it is far better that school children, if habitually constipated, shall be obliged to take some other time of the day, one which they can always devote to the purpose, preferably when the parent or attendant can know of the result.

This last requirement, regularity, is so important that it is very generally appreciated. It cannot be too much insisted upon, and it alone corrects many cases of constipation.

MASSAGE

If dietetic and hygienic measures are inadequate, there are still some other resources within the scope of domestic practice. The first to be mentioned is massage of the abdomen. The only objection to it arises from the ticklishness of some children, but if the masseuse, mother or nurse, remembers that the pressure of the fingers is to be made as if to reach something beyond the skin the tickling does not follow as it does from too light a touch. It is best that the massage should not be applied while the stomach is quite full. The following is a simple method which works very well: Slightly anoint the fingers of one hand with vaseline or some other lubricant to protect the skin from irritation.

Beginning rather low down on the right side of the abdomen with the tips of the fingers make little circular movements, advancing upward to the neighborhood of the ribs, then cross to the opposite ribs and then down upon the left side toward the groin. After a moment's rest, the performance is repeated, and so on for a number of minutes, say five, the time being increased if the shorter sittings are ineffectual, and two sittings a day may be given if necessary. If the operator pictures to herself an imaginary body within the bowel which she desires to coax along from the right flank up and across and down through the course of the large intestine she will pretty certainly hit upon the correct manipulations. Similar ones may, if necessary, be applied to the whole abdomen.

When other devices become necessary, there lies a choice between laxative medicines, suppositories, and enemata. As to which is the most preferable—*i. e.*, which has most advantages and fewest disadvantages—all are not agreed, nor is it probable that the answer should be the same for all cases. The writer's preferences on the whole are in this order: suppositories, enemata, and laxatives.

SUPPOSITORIES

In many cases the suppository must act merely by exciting a reflex action in the bowel or by bringing the child's attention to the desired act. For we often find that the simple introduction of an oiled syringe-nozzle or an oiled paper lamplighter is promptly followed by an evacuation. Among popular remedies we find simple suppositories shaped of molasses candy and soap. The latter has a decidedly stimulating action, and its prolonged use is said often to cause local irritation. Probably the kind of soap has much to do with this, but in any case where the oiled soap-cone is used signs of local trouble should be watched for. Glycerin suppositories are much used, and often for a long time without harm, but the same watchfulness should be given to them, as

glycerin is not a bland substance to all persons. Medicated suppositories should not be used without specific medical advice, and it is unfortunately true that some suppositories, sold under very innocent sounding names, often produce the evidences of strong medication upon the system.

ENEMATA AND LAXATIVE MEDICINES

The occasional use of the enema belongs properly to the nursery. Its prolonged use should not be adopted without medical advice. The same is still more true of laxative medicines.

It is to be borne in mind that medicinal treatment for habitual constipation is not to be adopted until a thorough and careful attempt to correct the difficulty by diet and hygiene has been made and failed.

VARIETIES OF DIARRHŒA

Diarrhœa, as the word is here used, means any disorder in which the evacuations from the bowels are increased in number and diminished in solidity. It is not true that all forms of diarrhœa are due to faulty feeding, but for the practical purposes of the nursery it is so nearly true that it may be so assumed. Different kinds of diarrhœa are described and are classified according to the views of authors. Those most commonly recognized are:

Simple diarrhœa, meaning a slight, brief diarrhœa, generally due to undigested food, occasionally to chilling or to heat and, but rarely, to the process of teething.

The *summer diarrhœa*, now believed to be usually due to some bacterial cause and based upon some preceding errors in diet.

The *inflammatory diarrhœa*, probably due to similar causes, but with more pronounced manifestations, such as mucus and blood in the stools. These last-named peculiarities of the stool usually are considered to constitute *dysentery*.

The name *cholera infantum* is often used to characterize the last-mentioned type of diarrhœa. It is a misuse of the name, and often gives undue alarm. The true cholera infantum is a rather rare disease, characterized by symptoms very similar to those of real cholera—namely, very watery, colorless discharges, usually vomiting, fever, and very rapid exhaustion. It is probably dependent upon some special poison, which is most likely one generated in bad milk. As the destructiveness of this type of diarrhœa is well known, it is a pity to give its alarming name to either summer diarrhœa or inflammatory diarrhœa, as is often done.

RULES FOR ALL CASES OF DIARRHŒA

For the physician the discussion of the various diarrhœal diseases and their management is a long one. But for the nursery guardian the rules are few and simple. It is safe to assume that some error of feeding has occurred. Either the cow's milk as given has for some reason not been what it should have been, or other improper food has been given, or more food than the child could digest, or it has been so frequently given that the digestive organs have had no rest, or the child was not in a condition to digest what ordinarily would have been proper, and so on. Therefore it is advisable

First of all, always to clear out the digestive tract to remove improper or fermenting substances likely to be there. Despite its unpleasantness, castor-oil maintains its place as the most desirable remedy. If it is retained, its action is more satisfactory than that of any other drug. If there is vomiting or much nausea it may be better to facilitate the clearing of the stomach by giving large draughts of warm water, which will be pretty certainly rejected. Calomel is a cathartic which has the advantages of helping to allay the stomach disturbance, as well as to disinfect the canal.

Second, if the cathartic does not put an end to the diarrhœa it is wise to ask medical advice. The same is true if

vomiting continues after the stomach has been cleaned out, as vomiting and fever may be a symptom of many disorders besides those of the digestive organs.

Third, the child is to be kept quiet and recumbent, best in bed.

Fourth, the digestive tract should be given as complete a rest as possible. Suckled children rarely have diarrhœa so long as they have no other nourishment. Children partly or wholly artificially fed, however, seem liable to these disorders in a general way in proportion as their diet departs from the natural standard. Therefore all solid food and all cow's milk should be stopped. Water (and in nursery sickness water means that which has been boiled and cooled) may be given in small quantities, and more freely if the stomach is quiet. If food is required, rennet whey, with or without wine, and white-of-egg water have both the indorsement of tradition. The egg mixture is made from the white of one egg, half a pint of water, seasoned slightly with salt. The white sugar formerly added is better omitted. It is usual to add brandy, say a teaspoonful. This mixture is given by spoonfuls. If much is given to a young child the amount of brandy need not be so great in proportion.

These simple measures are applicable to all the varieties of diarrhœa at the beginning. They may cure the malady, and in any case what has been done will be of assistance to the physician if his services are required.

STOMACH INDIGESTION AND COLIC

The same general rules are applicable to the treatment of stomach indigestion. If the trouble be but recent, unloading the stomach and bowels, rest of the body, and especially of the digestive organs usually restore the normal condition in a few days.

One other ailment of the digestion, more troublesome than dangerous, but causing in the aggregate a good deal of suf-

fering is intestinal colic, usually due to flatulence and popularly called *wind-colic*. It is found chiefly in the earlier months of infancy, both in suckled and fed children, but is nevertheless usually due to indigestion, and this to some disproportion between the food and the individual digestive powers. The picture of the contorted face, the spasmodic cry of pain, the hard abdomen, and the drawn-up limbs is familiar to most nurses. As the gas causing the pain is in the bowels it is much more promptly expelled if, instead of giving medicine (carminative teas, etc.), enemas to start intestinal action are used. A few ounces—three or four—are sufficient for an enema in young infants. Lukewarm water is useful. The writer has found a weak tea of catnip or mint leaves, especially the former, given warm, more efficient when used as an enema than when given by mouth. A small amount of glycerin is a very efficient addition to the water of an enema; for four ounces, from fifteen drops upward may be added, according to the age of the infant. Hot applications, preferably dry, are also useful. Friction or gentle manipulations of the bowels with the hand seem to stimulate the intestine to expel the gas.

If the infant be artificially fed the habit of colic may be corrected by more perfectly adjusting the food to the digestion. If the child be suckled this is more difficult, often impracticable.

X

THE EVIDENCES OF ILLNESS

IT is not necessary, even if it were desirable, that the mother or nurse should be able to make a diagnosis of the nature of any disease that a child may have; but it is very desirable that she should be able to recognize the symptoms of illness. These may be so direct and simple that they indicate the disease. At all events, they should convey to the mother the information that the child is not well and in need of help, either hers or that of a physician. If she has familiarized herself with the signs of health she will easily recognize departures from them. Below are some of the commoner ways in which a child manifests that it is not well, and may possibly indicate its malady.

GENERAL BEHAVIOR

Deportment. The usual expression of discomfort is restlessness and fretfulness. Sleep is disturbed, the quiet baby is no longer so, but desires attention, wants to be taken up, or in other similar ways shows that it is not at ease. Less frequently, children in illness, especially if the temperature be raised, become unusually heavy and drowsy.

Posture may vary somewhat in accordance with the just mentioned nervous states—that is to say, the restless child constantly changes its position, while the heavy one may lie perfectly quiet in one position, without much apparent preference as to what that particular one shall be. Special postures often are indications of particular conditions.

Thus, the head may be bent backward and the neck stiffened, or there may be a boring motion of the head with some inflammation of the brain envelops (meningitis). If there is labored breathing from any cause the child may be unwilling to lie down, and require to be held or propped up. If there be pain in the abdomen the limbs are generally drawn up. Many postures are assumed to avoid exciting local tenderness or pain.

Pain is expressed not only by cries but sometimes by expressive gestures. Often the child's hand is put to the seat of the pain.

Of local symptoms a few may be mentioned.

THE HEAD, FACE, AND EYES

The Head. Unusual shapes are gradually assumed in rickets (see p. 125), and in hydrocephalus, or chronic "water on the brain." But as evidence of acute illness, heat of the head, signs of headache, as shown by putting hands to the head; unwillingness to move the head quickly, may be instanced. If the child has the fontanelle still unclosed its throbbing may be used for counting the pulse more easily than at the wrist. It can be done by sight. If the head be fuller of blood than usual, as is sometimes the case in fever, the fontanelle may be prominent. In wasting diseases or with very poor nutrition it may be sunken.

The expression of the countenance as a whole tells not a great deal, except the difference between comfort and discomfort, but the various parts of the face often are expressive. Thus:

The *eyes* are frequently suffused in illness, especially at the approach of cold beginning as nasal catarrh ("cold in the head") or of measles. If the eye itself be inflamed or sensitive it may be red or the child may avoid the light by closing them or by turning the head. In disease the pupils may be enlarged or contracted, but rather as evidence of existing mischief than as a forerunner of trouble. A for-

eign body in the eye generally excites spasm of the eyelids and a flow of tears. Sleeping with half-closed eyes, if seen in illness, generally denotes depression.

The sides of the *nostrils* are seen to move in respiration in conditions of labored breathing, especially pneumonia.

SIGNS ABOUT THE MOUTH

The *mouth* gives a good many indications. If it be kept open, especially in sleep, it probably means obstruction to the ingress of air through the nose. Enlarged tonsils and, above all, the pressure of an adenoid growth in the pharynx may be suspected if the open mouth is habitual. If it is an accompaniment of fever, more likely it signifies tonsilitis. Children often put their hands into their mouths when the gums are tender or when the tonsils are painful, as well as when they are hungry. Eruptions are seen about the lips, especially at the corners of the mouth, in various ailments. The breath gives notice by its bad odor of disordered stomach, as well as of diseases of the nasal and pharyngeal mucous membrane. The gums are swollen with teething, swollen and easy to bleed in infantile scurvy. The upper surface of the tongue presents a great variety of coatings in various disorders. That which is of most importance in the nursery is the whitish or grayish overlaying (not the whitish tongue of the very young baby) which exists in a multitude of disturbed conditions, but which is generally considered as indicating some stomachic derangement, most likely due to improper feeding. Interrupted drinking or suckling or difficulty in swallowing suggests some obstruction to a free supply of air, such as collections in the nostrils, swollen tonsils or adenoids, or even some pulmonary troubles.

THROAT TROUBLES

The *throat* and fauces can be readily examined by placing the child upon the lap of another person in such a way that it faces the light. The child's head is held. The ob-

server then depresses its chin to open its mouth, and if the child cries no depression of the tongue is usually necessary. If it does not cry, the tongue may be gently and quickly depressed by some small, smooth, flat implement; the smooth handle of a teaspoon is the traditional one. A single glance, if fortunate, shows if the tonsils be swollen, if they have any white spots or patches upon them or on other parts of the throat. It is not easy to describe the differences between the spots of the ordinary "follicular tonsilitis" and the patches of the diphtheritic variety. In fact, the bacteriological study of such matters has to a very great degree broken down the distinctions formerly made. So far as anything can be stated, it is this: that spots on the tonsils alone which show no tendency to spread or to run together are probably not diphtheritic. Those which do spread or unite, and spots on the palate, in the pharynx ("back of the throat"), or in the nose probably are diphtheritic. But the distinction is not to be certainly made, even by a physician, without microscopic evidence. Hence, any sore throat should be isolated, and if any patches or spots are seen it is better to have a physician's opinion. "Sore throats" are not to be slightingly treated, since there is good reason to think that—aside from diphtheria—they are the infective starting-point for enlarged glands, rheumatism, and other constitutional disorders, not to mention nearly all ear troubles.

THE VOICE

The *voice* and *cry* vary with the disturbance. The tired "worry" of a sleepy child is sometimes heard in illness. The explosive cries of anger and fright are not evidence of illness. The hoarse note heard in both cry and cough, the latter resembling a bark, shows laryngeal inflammation—that is, croup. In obstructive croup the sound is much lessened. When the nose is obstructed the note of the cry is modified, as would be the voice of an adult. The loud cry of pain is pretty easily recognized; it is prolonged or

spasmodic, in harmony with the pain, the tormenting pain of earache, for instance, giving rise to a prolonged cry, a colic usually to one which is interrupted and renewed.

THE EARS

The *ears* give notice only of troubles connected with themselves, and then through tenderness of the external ear when touched; but it is well to discover, by touching or lightly tapping the bone behind the ear, if there be tenderness there, as such a symptom calls for prompt attention. Discharge from the ear is evidence of disease within, a condition to which too little attention is often given.

BREATHING

The warnings from the *chest* usually come through altered breathing or through coughing. The *respiration* of an infant is much faster in health than that of an adult, and is somewhat less regular. The respiration is hurried, with a rise in temperature, and roughly in proportion to the degree of rise, the pulse usually rising also symmetrically. In pulmonary inflammation the rate of respiration often, but not always, rises out of proportion to the pulse-rate and the fever. Slowing of respirations below the normal ordinarily may mean some brain disturbance, such as the meningitis caused by tubercle or poisoning from opium. Very disordered rhythm of breathing, rising and falling, are noticed in some brain troubles. Difficulty of breathing, such, for instance, as is caused by obstructions in the windpipe, by diphtheritic croup, produce the breathing known as "labored," in which all the accessory muscles that can help respiration are called into service.

VARIOUS COUGHS

Coughs have a good deal of character. The resounding metallic bark of common "spasmodic" croup has just been

alluded to. No warning need be attached to it, for it compels attention. The smothered, hoarse cough of laryngeal obstruction is really more alarming to the physician. The cough of throat irritation is usually short and teasing. That of bronchitis is pretty frequent, and not usually very tight, while if the chest be sore there is apt to be a little cry with or after it. The cough of pneumonia is tighter, seems to be, and probably is, suppressed on account of pain, and the child has no breath to waste in crying. In fact, it is surprising to see to what an extent a child with this disease will sometimes refrain from crying and eating, apparently to save breath. The cough of influenza, when characteristic, is persistent, pestilent, and wearing, often recalling that of whooping-cough. The cough of this latter disease is so characteristic that without its peculiar "whoop" the diagnosis may remain uncertain. The patient begins with a cough, a little spasmodic, which is repeated more and more rapidly, without proper inspirations, until the stomach is emptied by vomiting or the paroxysm ends with a long crowing inspiration, which is the "whoop." The performance may then be repeated.

VOMITING

The *stomach* empties itself much more easily in infancy than later. The overfull suckling regurgitates its surplus without an effort, and this return is not a sign of illness. Real vomiting, however, is often seen as evidence of stomach indigestion (tough curds, etc.), as well as of other stomach and bowel troubles. It is a frequent initial symptom of some of the eruptive fevers, notably scarlatina, also of pneumonia and of malarial fever. In the latter two disorders initial chills are rarely seen in young children, while vomiting or convulsion instead is not rare. Peculiar types of vomiting are seen in special diseases, such, for instance, as the so-called "projectile" vomiting associated with some brain disorders, the matter being suddenly and violently ejected; vomiting often attends the rally from the

stunned condition (concussion) arising from a blow or fall upon the head. The vomiting of whooping-cough seems to be merely a mechanical result of the violence of the paroxysm.

The *abdomen* will help to make a diagnosis in case of colic. It is then usually distended, hard, and, if tapped upon, resonant. The retracted abdomen of some brain troubles is rarely an early symptom.

THE URINE AND BOWEL DISCHARGES

The *urine*, which in infancy is pale, clear, and of little odor, may in illness become scanty, darker, and sometimes have fine reddish grains, which can be seen. When these are very minute they may be known only by the stain on the diaper. Granules large enough to be seen may cause pain in passing. Medicines may stain the urine. Santonine, an ingredient of some worm lozenges, gives it a saffron color, which may stain the napkins. Children who eat asparagus pass urine having the familiar offensive odor of the eliminated asparagin.

The *stools* are, in a healthy infant, characteristically yellow, the depth of the tint bearing some relation to the strength of the food. The stools often undergo a change of color to green soon after they are passed, sometimes without any derangement of health. Stools persistently green when passed generally denote intestinal disturbance. Lack of bile in the movements gives a gray color, often called "clay-colored," and this may be even chalky. Some medicines color the stools. Bismuth is the most striking in its effect, as its stain is an olive-green, which may be bluish or even nearly black. Iron also blackens stools. Any considerable blood in a movement coming from some distance up the canal may make it black and sticky in consistency. Curds in the stool denote indigestion. Mucus (which in health is incorporated with the fecal matter) is evident and often streaked with blood in inflammations of the intestinal canal (inflammatory diarrhœa).

FEVERS

THE *skin* gives indications of fever by its heat and dryness. It will often, if examined carefully, show various eruptions, which may be those of the special eruptive fevers, or may be some of the various skin manifestations indicative of digestive or nutritional disturbances. The former eruptions will be alluded to in connection with symptoms of these fevers.

Temperature. Since the introduction of the fever thermometer it is no longer necessary to judge of the degree of fever by the touch. The latter will be deceptive if the skin of the child be, as may happen, moist as well as hot, or if the hand of the mother be either unusually hot or cold from anxiety. A thermometer can now be had for a dollar, or a little more, which will register in a minute or two. The temperature is best taken in the rectum. The thermometer is first washed and dried, the registering index shaken down below the marked normal point, the bulb end anointed with vaseline or some other unguent, and then gently slipped into the bowel about an inch. After a minute or two, or longer if the instrument be a slow one, it is gently removed and the temperature read from the *top* of the registering index. The bowel gives the full heat of the body more completely than the mouth, armpit, or groin. The instrument is again cleaned and put away.

The temperature is not a fixed indication of degree of illness. Its value must be taken in connection with many other things. A temperature which would be trivial from one cause may give the physician much anxiety if from another. It seems, therefore, unwise to set up any figure as the mark of great danger. It may, however, be fairly said that temperatures from 100° F. to 102.5° or 103° constitute what is usually called moderate fever; from 103° to 105° high fever; above that point very high or exceptional fever. The height of the fever, the disease being the same, corresponds fairly well with the severity of the attack. Probably of more importance than the point marked at any

one time is the duration of the fever. The indication of fever, if of more than very moderate amount, is to call for medical help, unless the temperature promptly yields.

Given a fever of the range denominated moderate or high, its meaning may be often guessed from the attendant symptoms. Thus, if with smart fever the child cries much and puts its hand to its head or ear the trouble is very likely in the latter, especially if throat trouble has preceded. Fever with the signs of sore throat described make tonsilitis probable. Fever with cough suggests bronchitis or pneumonia, and so on.

SYMPTOMS OF CONTAGIOUS DISEASES

While, as already said, it is not the purpose of this book to enable the mother to recognize and treat diseases, it is desirable that she should have knowledge of the symptoms which are usual in the beginning of contagious diseases, especially of the eruptive fevers, since with these the patient needs to be promptly isolated from other children. It can hardly be too much insisted on that every sick child should be as far as possible isolated, not only for its own advantage, but, until it is positively known that its disease is not contagious, for the safety of others.

These contagious disorders have a number of peculiarities in common, besides the fact that the temperature is elevated. First they have a period of *incubation*—that is, a period between the exposure which is the source of infection and the very first symptom. This period is more variable in some diseases than in others, and some variations exist for all. Thus, it is for

Scarlatina, from one day to three weeks, but most cases appear within a week, a majority within four days after exposure.

Measles, usually between eleven and fourteen days, but much wider variations in both directions exist.

German measles has the same wide variation, but most cases develop between the eighth and the sixteenth day.

Whooping-cough, probably between one and two weeks. It comes on so gradually that it is difficult to be sure of its exact beginning.

Mumps, usually from two and a half to three weeks.

Chicken-pox, usually from fourteen to sixteen days.

Varioloid (that is, small-pox modified by earlier vaccination), ten to fourteen days.

Small-pox, usually twelve days. Vaccination, two to four days, commonly four before there are really noticeable effects.

A knowledge of these periods is helpful, in that if they pass, after known exposure, without manifestations of disease, it may be considered that contagion has probably not taken place.

THE INVASION PERIOD

Secondly, these diseases have a period of *invasion*, in popular language, "when children are coming down with" this or that disease. The invasion of an ordinary case of scarlatina is usually marked by abrupt rise of fever, vomiting, occasionally a convulsion, sore throat, which looks red, and the eruption, following in from twelve to thirty-six hours. Measles begins with irritation of the eyes, sneezing, running from the nose, and a very irritating cough. Certain spots in the mouth are thought to indicate measles, but they are not easily recognized without training. The eruption comes after from two to four days. Measles is one of the most contagious of diseases, and may be communicated from the beginning of the symptoms. The fever of measles generally rises rather gradually until the rash is well started, then gradually declines.

German measles has a very brief invasion—a few hours—and often the eruption is the first thing noticed. Other symptoms, if any, are usually similar to those of measles, but much less marked.

Chicken-pox has little fever, the eruption appearing within twenty-four hours.

Mumps has but slight fever, and the local symptoms are such that they can hardly be mistaken, especially if the disease is known to be prevalent.

CHARACTERISTIC ERUPTIONS

The eruptions are for the most part distinctive. That of scarlatina is made up of such minute red points as to appear an even red. It first appears on the neck and chest. If looked for, it, or something very like it, can be often seen in the throat before it appears upon the skin. Once it begins upon the skin it spreads gradually over the whole body, disappearing in the same order. It continues from three to seven days. The desquamation or "peeling" begins soon after the rash has gone. The epidermis often falls off in large pieces. It may last many weeks, even two months. The time of greatest communicability is during the periods of active eruption and the desquamation. So long as the latter continues anywhere the patient is a source of contagion. Mild cases are often very dangerous in this regard, as they are not always carefully watched.

The eruption of measles is much darker in color, is made up of dark red or purplish spots, sometimes raised slightly. These spots are usually gathered in small patches, often described as crescentic, although not very strictly of that shape, spaces of clear skin intervening between them. In very profuse eruptions the patches sometimes run together. The eruption usually is first found, if looked for, behind the ears, but oftener is first noticed on the face and forehead. It spreads during two, three, or more days over the body, fades in the same order, lasts usually from four to six days, and desquamates in fine pieces. The eruption of German measles appears first upon the face; sometimes it may be found still earlier on the roof of the mouth. Sometimes it spreads like the other eruptions, sometimes seems to come all at

once. It is remarkable for its variability in appearance. More commonly it is a good deal like the eruption of measles, but appears in larger and more solid blotches of spots. Again, it may quite closely resemble that of scarlatina. It is sometimes quite difficult to discriminate, and the disease is perhaps more important from the trouble it creates through mistakes than from its own gravity. The rash usually lasts two or three days. It has been thought that more than one disease may be really included in the name of German measles. Chicken-pox has an eruption of distinct, scattered, slightly raised, flattened spots, many of which progress to the formation of blisters (vesicles). These dry into crusts, beginning in the middle of the vesicles. The eruption appears in crops, so that the various stages may be seen together after a few days. Whooping-cough has no eruption, and, as has been said, its one certain symptom is the peculiar cough.

PERIODS OF ISOLATION

The quarantine period of these diseases differs. Scarlatinal patients must be isolated as long as any desquamation is observed anywhere. It lingers longest on the hands and feet. The poison clings in a remarkable manner to the sick-room and to articles in it. Hence the need of very thorough disinfection. Measles generally has completely gone by the end of four weeks, and the contagion rarely lingers in articles about the patient. It seems to be to a great degree personal.

German measles is a disease of such ordinarily mild behavior that, except in institutions, quarantine is rather lax regarding it, provided the diagnosis of the disease is sure.

Whooping-cough is, like measles, very contagious, and, like it, communicable from the very beginning of symptoms. Its characteristic symptom—the whoop—is so long in appearing that the sufferers are usually allowed to go about a long time after the disease is communicable. How long it is

communicable is not well settled. Probably it is so for three months on the average, and the quarantine should be continued for some time, a week or two certainly, after the patient has ceased to whoop.

Mumps also is thought to be contagious for a considerable time.

XI

DOMESTIC TREATMENT OF ILLNESS

THE domestic treatment of illness, if it be wise, is little more than skilful nursing. As the mother gains experience, she may venture upon some simple medications. As the skilled physician of to-day usually relies more and more upon hygiene and the application of physiological knowledge, and less and less upon medication, so wise domestic medicine will have little of dosing in it. It is assumed that if a child be really ill a physician will be called. Often it will prove that if he had been called early a single visit would have been enough; bad domestic medicine leads to his being obliged to pay many.

The mother, if she sees the evidence of some illness, may think it unnecessary to send for a physician, and may be quite right in so thinking. But she may wish to do something for the child's relief. Her first endeavor will be to try to learn what is the trouble with the child. She may know of exposures, fatigues, errors of diet, or even of contagious maladies to which it may have been exposed. If she has any idea of the nature of the malady, or if she can note only symptoms, her next thought should be, What am I trying to do? The answer should be, "I am trying to relieve this or that symptom," in which case she is likely to do no harm, at the least. This is emphasized because in practice the physician too often can see no reason for the treatment which has been given before he arrives, except a nervous, anxious desire to "do something." If, then, the mother asks herself, Will this remedy relieve the symptom?

will its employment throw any obstacle in the way of the proper treatment of the case if further treatment be necessary? she has a fair chance to cure the child herself, and, if not, she has helped the physician to do it.

PRECAUTIONARY MEASURES

First, she may put the child to bed. This alone is a remedial measure. The mere undressing of the child may reveal some previously unnoticed symptom. The putting of the child into bed takes it off a drafty floor, and removes the discomforts of clothing, and recumbency relieves many an irritation due to activity. At the beginning of "a cold" or of a diarrhœa it may be of considerable service. A child who, if allowed to play around half sick till bedtime, would have a feverish night may have a far more comfortable one if it has been put to bed as early as it is discovered to be ailing. The infant practically is abed most of the time, and this suggestion is not very useful at its early age, except so far as meaning that the little one is to be put into the more comfortable night garments. Do not burden it with unnecessary coverings.

It is sometimes objected that the child does not like to go to bed. This brings up one of the most important matters in the care of sick children—namely, the habit of obedience. The child who has been taught to obey and obey promptly rarely rebels in illness. Habitual wilfulness balks all endeavors for the child's benefit. Slight illnesses become considerable ones, severe ones become perilous. It is no exaggeration to say that lives are sometimes lost through the resistance that a wilful child may make. It not only fatigues the attendants, but wears out its own strength. It is well known that such children often obey a trained nurse better than a member of the family, and it is true, however regrettable, that in some nurseries there is no difficulty if the physician has no helper but the ordinary nursery-maid, while if the mother or the father be present, proper

examination or treatment of the little patients is nearly impossible.

THE WARM BATH

Baths are among the most efficient remedial agencies at our command, and are accessible to nearly every one. Baths are named according to temperature, different writers classifying them in a slightly different way. Only three baths have a place in illness without medical direction—the *tepid* bath, 85° F. to 91° F.; the *warm* bath, 91° F. to blood-heat, 98.6° F.; the *hot* bath, any temperature above blood-heat. If it be a bath for immersion of the whole body, 104° F. or 105° F. will usually be the limit of tolerance. It is doubtful if there is any disease at the beginning of which a warm bath may not be safely given to a child previously well. In almost any state of irritation it soothes the nervous system, as well as the skin. It is also to be remembered that although its temperature is very nearly that of the body in health, if there be four to six degrees of fever the bath will be quite a little below that abnormal temperature, and temporarily will diminish it, with corresponding diminution of discomfort. It is this warm bath which is most commonly and judiciously used in illness. It will be noticed that its application has been just now restricted to the beginning of illness. This is because there are some diseases, especially those of the chest, in the course of which baths should not be given without specific directions, and because in the course of eruptive fevers, in which they are often very valuable, there are conditions in which they must be given with caution.

The *hot* bath is very stimulating, is useful in case of chill or chilling, and is often applied to hasten the appearance of an eruption which is believed to be imminent but delayed. It is of more limited use than the warm bath, and is to be employed with more caution. The *tepid* bath is used when a more distinct depression of temperature is desired than will be produced by a warm bath.

MEDICATED BATHS

Baths may be medicated in some ways for especial purposes. Thus, for certain irritations of the skin an *alkaline bath* may be desirable. Such a condition is seen in the well-known prickly-heat of summer, or in nettle-rash or hives. If to a warm or tepid bath enough soda—either the carbonate, "washing-soda," or the bicarbonate, "baking-soda" —is added to give the water a slightly slippery feeling between the fingers the bath is more likely to allay the itching than a simple bath would be.

Similarly, for some skin irritations, as in some cases of eczema, a *bran bath* has a beneficial influence. It is made by boiling a bag of bran and adding the water in which it has been boiled to the bath, or by squeezing the bag of bran in the hot water in the bath-tub, which will meantime cool sufficiently for use. A similar effect can be obtained by adding starch to the bath, or to the alkaline bath just mentioned.

Salt added to the bath increases its stimulating power, making it comparable to sea bathing. The salt baths are chiefly useful in debility, and may be used for children too young or too feeble for sea bathing, or at seasons when and in places where the latter is not obtainable.

Mustard is a still more stimulating addition to the bath. Unlike salt, its application is in acute conditions, and only for a short time. It must be used very cautiously in a general bath, for fear of too great irritation of the tender skin of childhood. Its greatest use is in a foot-bath or hip-bath, often used to relieve symptoms of congestion in the head or chest, as in the beginning of a "cold."

Disinfectants may be added to baths when it is thought that contagion lingers about the skin. As this most commonly occurs after contagious eruptive diseases it is probable that the physician will direct the most desirable form of bath. Many of the most efficient antiseptics are not quite safe for indiscriminate use in the bath. A salt bath of good

strength, say a pound of salt to eight gallons of water, is itself disinfectant to some degree. The skin, after drying, can be rubbed with alcohol, which is a good antiseptic. Among safe disinfectant drugs, boric acid and salicylic acid may be mentioned, but, owing to their cost, they would better be used in a sponge-bath, after a thorough cleansing in the ordinary bath.

HOW TO GIVE BATHS

A FEW words may be said about methods in giving baths. A child's ordinary bath-tub may be used, but if the bath be much hotter or cooler than the child is used to, especially if the tub be of metal, it is better to place in the tub a sheet or large towel to prevent the body's touching the tub and getting a shock. If a warm bath—and still more if a hot bath—has been given, the child should be lifted immediately into a blanket or warmed sheet, and rolled up and not dressed until the skin is dry and the change a little recovered from.

If it be desired to give a tepid or even cooler bath, and shock be feared, or the child be timid or excitable, the object may be accomplished by what is known as the "graduated" bath—that is, one of gradually changing temperature. If the ordinary set tub be used, a tube of rubber can be first adjusted to the inlet of the cold water. This is hidden by the bath-sheet. A warm bath is drawn, and when the child has been in it a minute or two the cold tap is very slightly opened and the water allowed to run very slowly, until the desired temperature of the bath is shown by the bath-thermometer.

The duration of a bath varies with the temperature. A warm bath should ordinarily not be continued beyond ten, or at most fifteen, minutes. A hot bath must be very brief. It is better to repeat the immersion if necessary, after a little while, than to make the first one unduly long. The same is equally, if not more, true of cooler baths.

SPONGE-BATHS

When cool or cold baths seem called for it is better, in the absence of medical advice, to give them in the form of sponge-baths. The child, lying upon a blanket or bathing-sheet, and lightly covered, can be sponged part by part until the desired alleviation of the discomfort or symptom is gained. Exact indications for the use of hot or cool baths cannot be well given, as they depend upon states of the pulse and circulation not appreciated without training. In a general way, it may be said if the child is weak or depressed give only the warm bath.

VAPOR-BATHS

If, on the other hand, it be desired to excite perspiration rapidly and profusely, a *vapor*-bath will be an efficient method. If there be a croup-kettle obtainable, it is the most convenient way of making steam. In its absence, steam from a tea-kettle may be made use of. In either case the bed-clothing is to be raised tentwise, either by hoops beneath or a cord from above, and the vapor introduced underneath them by a pipe. For a child able to sit up the ancient method of a chair sweat may be employed. The child was placed in a chair, an ordinary wooden-bottomed kitchen chair or a cane-seated one; a blanket was drawn about the child and chair, inclosing both as in a tent, the head alone appearing through the top. Upon a heated brick or stone, placed in a basin under the chair, hot water was allowed to slowly drip. The heat of the stone or brick vaporized the already heated water. In the same way a *hot-air* bath may be extemporized, the heat being obtained from heated stones as before, from a vessel of hot water, or even, with proper precautions, by means of burning alcohol—the traditional "rum-sweat" of New England. The hot-air bath is even more efficient than the vapor in inducing perspiration. It can be very easily given in bed by using an elbow of metal

pipe (stovepipe, for instance). One arm goes under the elevated bed-clothes as before. The other extends down toward the floor. Under its open end a lamp, preferably an alcohol lamp, is placed. The hot air rises into the bed.

COLD COMPRESSES

If it be desired to reduce locally the heat of any part, the usual resources are *cold compresses* or *ice-bags*. The former are simply folded cloths or pledgets of absorbent cotton dipped in cool or iced water and squeezed just enough to prevent the water from flowing. They are laid upon the part—the eye, for instance—in which it is desired to diminish the flow of blood, and hence to limit the inflammation of the part. For cooling a larger surface, the ordinary rubber water-bag may be partly filled with cold water and applied to the part. Ice-bags more suitable to special applications are made of thin rubber, which adjust themselves to the surface quite perfectly. The ice-cap is the commonest example of these. The opening is large enough to admit pieces of ice of considerable size, and is stopped with a cork. These ice-bags, however, are rather beyond simple domestic medicine, as without previous direction their use is not sure to be advisable.

HOT APPLICATIONS

Heat may be applied locally by means of the hot-water bag now in common use. If several sources of heat are needed they usually are to be had in bottles of hot water, in hot bricks or stones (all, of course, to be enveloped in wrappings, preferably of wool), in bags of sand, or of salt heated in the oven.

A moist local application of heat constitutes a *fomentation*. Usually cloths wrung out of hot water are used, applied over the part where pain is to be eased or to the surface of which it is desired to attract the blood. The stimulating effect may be increased by sprinkling the surface of

the wrung-out cloth with tincture of camphor. Applications of spirits of turpentine used in this way or simply sprinkled upon a dry cloth and applied are called *stupes*, but the word really means any fomentation. Turpentine stupes and stupes of hot mustard-water are very stimulating to the skin, but should be used with the greatest care on children too young to quickly express their feelings, as an undesirable amount of irritation can be easily produced. Mustard should not be used upon an unconscious person. The chief use of stupes is in cases of abdominal troubles. Camphorated oil produces a gentle stimulation of the skin, and is a popular remedy in infantile chest disorders. It is however doubtful if it be of great value.

POULTICES

If it be desired to make a more prolonged local action of heat, *poultices* may be used. Their chief use is where heat and moisture are desired upon the skin; sometimes they are of a nature to be directly soothing to the parts beneath. They may be made from many substances, as, for instance, any kind of meal, of which flaxseed-meal has the best consistency for the purpose, or ground slippery-elm bark, which has no particular advantage over the flaxseed and is much dearer; bread and water, or bread and milk. Various vegetables, such as onions and potatoes, have had popular repute for this purpose.

The traditional uses of poultices are to quiet local inflammations and to hasten suppuration when it is inevitable, as in ordinary boils. Formerly they were used for many purposes to which a hot-water bag is now applied. The use of large poultices upon the chest in disorders of that region, especially in pneumonia, is common. They are probably useful if skilfully used, but otherwise they are not. To rouse the feeble respiration of a sick child the poultices must be applied hot, but not too hot; must be changed frequently, every half hour at the longest, and changed with speed, the

new one being ready before the old one is removed. All this requires dexterity, and usually two pairs of hands.

Poultices should not be used carelessly. Never poultice an eye without specific order of the physician.

Stimulant poultices are made by adding to the ordinary material some proportion of mustard. A mustard-plaster is a poultice entirely or largely of mustard. For young children the latter are usually to be avoided. Plasters made in a similar manner from the various ordinary spices are warm enough for young skins.

HOW TO APPLY POULTICES

The making and application of poultices require a little knack or knowledge. The materials used may be various, as just mentioned. Whatever is used, the mixture must be, when done, entirely smooth; nothing hard or harsh is admissible. If bread and milk or bread and water be the materials, the boiling water should first be poured into a hot bowl, or the water may be heated in a saucepan. In either case the bread-crumb, no crust, should be broken into it and the whole beaten together with a fork, to keep the mass as light and soft as possible. Flaxseed-meal or ground elm-bark may be stirred into the hot water and heated till the mass boils or steams and becomes soft. A poultice should not be so stiff as to be harsh, nor so thin as to run. A beginner is likely to use too much water.

Any soft, thin fabric of sufficient strength will do for a poultice cloth. Of late years the porous materials known as cheese-cloth and butter-cloth have in great degree displaced others. They are very suitable to the purpose, and so very cheap that they may be thrown away without thought. Bags of these materials of suitable size may be made, into which the poultice mass is filled when ready, and the open side stitched up, or a suitable piece of the stuff may be laid upon a hot plate and the mass spread half an inch thick or more, the edges turned over and stitched together if they

do not remain in place without. The poultice should be always large enough to considerably more than cover the surface to be acted upon; a boil, for instance, having a reddened surface two and one half inches across, will require a poultice four inches square at least.

One of the inconveniences of poultices is their drying and sticking to sensitive surfaces or to parts upon which short hairs grow. This may to a great degree be obviated by first putting oil or vaseline upon the surface of the skin or of the poultice; and both the drying and cooling may be hindered by placing over the poultice a piece of oiled silk or gutta-percha tissue, and over it again some cotton batting, the whole to be kept in place by a bandage or the like. The older method of making poultices covered on one surface only with cloth favored this sticking, but the open-textured kinds of poultice cloth mentioned may cover both surfaces of the poultice mass, one lying between the latter and the skin.

In putting on a poultice let it approach the surface to which it is to be applied gradually, and put it in place as soon as the heat can be borne. It usually needs renewal in a few hours—two to four, on an average.

In the absence of any suitable poultice material, a temporary substitute may be found in a thick piece of cotton batting or, still better, absorbent cotton, dipped in hot water, pressed partly dry, and applied and treated, as to covers, as advised for a poultice.

JACKETS FOR THE CHEST

So, also, some of the advantages of a poultice may be obtained by the use of the cotton and oiled-silk jacket for the chest. Without the oiled silk, the cotton simply makes an additional protection against chilling. It has the advantages and disadvantages of excessive clothing. When the oiled silk is used the perspiration converts the cotton into a permanent poultice. This was, not may years ago, a rou-

tine application in pneumonia. It is probably much less used at present. The jacket is made of muslin or similar material, made to go quite around the chest and hollowed out to admit the arms. To it the layer of cotton is basted thoroughly to prevent its shifting. A soft inner lining in addition is still better. It is tied around the chest and over the shoulders with tapes arranged for the purpose. If oiled silk is used, it is modeled to fit the shirt, and also tied in place.

CATHARTICS

In a great many of the disorders of infancy and childhood evacuation of the bowels by remedies is necessary or advantageous. In fact, it is rarely out of place. In childhood the intestinal canal very often contains improper food or an excessive amount of food otherwise proper. In infancy the intestinal contents are often the results of imperfect digestion of food. In all these conditions the clearing out of the canal is essential to the prompt relief of the malady, even if it be one not immediately caused by the digestive state. Hence the important part played by laxatives or cathartics in domestic medicine. The treatment of habitual constipation is not here considered. For clearing out the canal promptly two remedies may be mentioned. First, castor-oil. On the whole, it is the surest and safest of cathartics for domestic use. It not only acts as such, but in many disturbances of the digestive tract is additionally beneficial. The dose for clearing out the intestinal canal should be a tablespoonful, say, at four years of age, half that—*i. e.*, a dessertspoonful—at one year, and a teaspoonful by a half year is usually well borne if needed.

CALOMEL

If there is vomiting or nausea, calomel is a better cathartic. It helps to quiet the stomach. There is no difficulty in giving it. The best method is to use the triturates so

generally found in the pharmacies at the present time. Triturates of one tenth of a grain are very convenient for general use. One hourly may be given for several doses, according to the age of the child. A child of a year may take ten doses in this manner, but if the bowels move early, especially if the greenish color of the calomel stool is noticed, the doses should be stopped. Children bear calomel in proportionally larger doses than do adults, but this is not a reason for overdosing.

THE GIVING OF AN ENEMA

When the bowels are simply constipated, an enema may give all necessary relief, or a suppository may serve. Various syringes are recommended for enemas of children, but it is not usually worth while to multiply apparatus, especially if of rubber, which deteriorates very rapidly if not in frequent use. It is better to become expert in the use of some one kind. Hence the bulb or bag syringe, which can be used for many things, is generally used. It is true that if the enema is needed for a very young infant, the syringe which consists of a bulb with a soft-rubber nozzle, without an intervening tube, is convenient, because it can be used with one hand. The hard-rubber syringe, with a plunger or piston, is convenient for giving definite amounts of medicated liquids. On the whole, the bag syringe is the most convenient. The enema, say of soap-suds, is prepared preferably in a pitcher. For a very young baby a half pint should be prepared, as some will be wasted in the syringe. For an older child at least a pint will be needed. Hang the bag at a small elevation, not over two feet above the infant, as the object is to inject the liquid gently, as it is thus less likely to be prematurely expelled. Attach a small nozzle to the tube, and lubricate it with oil or vaseline. Fold a thick towel beneath the child's hips. When this is ready pour the enema into the bag. The bag will slightly cool the liquid, so it should be mixed more than blood-warm. Introduce

the nozzle, the child being on its back or left side. Gather up some folds of the towel about the nozzle, to make pressure against the bowel so as to help the retention of the liquid and open the pinch-cock of the tube attached to the bag. If the child after a while endeavors to get rid of the liquid, close the pinch-cock, as the feeling may subside and more be given. If it does not subside, the vessel, which was placed at hand before beginning, is placed to the child or the child upon it.

One who has learned to give an enema well can easily learn to irrigate the bowel, as may be necessary in diarrhœal diseases. But as it will be ordered and demonstrated by the physician it will not be here described.

XII

HINTS REGARDING THE ADMINISTRATION OF MEDICINES

THE giving of medicines often requires a little tact, and a knowledge of details helps exceedingly to their successful administration. Before entering upon these details, a few general remarks may be made.

First of all, we would deprecate the practice often indulged in by the ignorant, and sometimes by those who should know better, of holding up the physician as a bugaboo and the administration of medicine as punishment, or, at the least, a thing to be dreaded. Medicines sometimes are unpleasant, more commonly they need not be, and in any case it is the part of wisdom to prepare the way for a possible need by speaking of remedies as helpful rather than as objectionable, and of the physician as a family friend in time of need rather than as a beadle or nursery executioner. This advice is fortunately now less necessary than formerly, and the "Doctor" is in many houses quite as popular in the nursery as he is anywhere. And we have known certain pious frauds to work to advantage, such as in families where candies are rarely admitted, to call them always "medicine," which name therefore became associated with a pleasant rather than an unpleasant thought.

Another general suggestion is this: Do not make a parade or fuss in getting your remedy ready. If anything of the sort be necessary, let it be done out of the child's sight, and the remedy be brought when ready for administration; it may then be swallowed without objection, while, if time had

been allowed, antagonism would have been excited. Make the giving of each dose as tidy as possible.

If doses are to be given frequently, or for some time, it is of help to make out on a slip of paper a schedule of hours for them, and as each dose is given draw a line through that hour. This shows, afterward, not only when the dose should have been given, but that it was given. The plan is especially useful to avoid confusion when more than one remedy is required. The tumbler covers with dials are handy, but only when the medicine is in liquid form.

LIQUID MEDICINES

Liquids constitute the chief form of medicine given to children, owing to their inability, as a rule, to take other forms. If a medicine has little taste, or at least little disagreeable taste, this form is unobjectionable; but otherwise the other forms are preferable as soon as the child is old enough to take them, as in them taste can in one way or another be hidden. Medicines are sometimes insoluble, and must then be given in some more solid form. It should be remembered that some infants dislike to take anything into the mouth except by sucking. It is rather hard to teach such children to take even a drink of water from a cup or from a spoon.

WAYS OF GIVING MEDICINES

It is of advantage to give water even to the youngest suckling, and it is an additional reason for so doing that by this means the child learns to take liquids from a spoon or cup, and has less difficulty in taking medicine in case an emergency arises. If a medicine is prescribed by a physician, learn from him just how it is to be given, even as to the amount of water in which each dose is to be administered. This latter point may not be important in many cases, but in some it may. For instance, saline medicines

largely diluted may act upon the kidneys, while if less diluted they would more probably act upon the bowels.

As a rule, medicines which are in any degree pungent or which might be irritating, should be largely diluted, or water be given directly afterward. On the other hand, medicines which have a decided taste should be diluted as little as is consistent with the foregoing rule, in order that the disagreeable taste may not be unduly prolonged. It is not good policy to sweeten such medicines, but rather to give the *douceur*, whether a sweet or a tasty fruit, immediately afterward. Sometimes a decided taste, as of orange juice, in the mouth just before the medicine, is an excellent disguise, especially if it be repeated just afterward. We will speak of this more fully presently.

HOW TO PREPARE A DOSE

If a liquid is to be given in doses of a certain number of drops, especially if given frequently, much time and annoyance may be saved by mixing a number of doses at once. For instance, suppose the physician has ordered that a drop of tincture of aconite be given every hour or half hour until certain effects are produced. The giving of a single drop thus often is sometimes difficult, especially with the agitating circumstances which attend a baby's illness. It is then better to put into a tumbler or some other convenient vessel a certain number of drops of the medicine, it does not much matter just how many, if they be counted. Then add the same number of teaspoonfuls of water, and mix thoroughly by stirring. Evidently each teaspoonful will contain one drop of the aconite, and it is only necessary to stir the mixture well before each dose and to take up the teaspoonful to insure the proper quantity. If the dose is to be larger, it is easily obtained by giving the requisite number of teaspoonfuls, or, if smaller, by adding a proportionately larger number of spoonfuls of water at the start. In any case drop out the medicine before adding the water.

IRON PREPARATIONS

In spite of the advances of pharmaceutical chemistry, it is sometimes necessary to give solutions containing acids either as such, or as helping the solution, like some preparations of iron. These solutions "set the teeth on edge," and fears are naturally entertained, and sometimes with reason, lest the teeth be injured. In such cases it is well, unless the physician has a reason to the contrary, to resort to the following device to prevent harm. Before giving the dose, dissolve a little baking-soda, say a good pinch, in a third of a tumbler of water; warm water we prefer. As soon as the acid dose is taken, let the patient rinse the mouth with the soda, which neutralizes the acid and removes the "on-edge" feeling. If the child is too young to do this, wash the mouth with a rag dipped in the soda. Older children can also prevent harm to the teeth by the use of a tube or straw in taking the acid.

CASTOR-OIL

Oily liquids require some special attention. As has been already said, in domestic practice, and on the whole wisely, castor-oil plays an important rôle. But its giving need not be made so difficult as it often is. If the oil is fresh and of good quality, its taste is not nearly so bad as that of many things more readily taken. If through carelessness the oil becomes rancid, it is a nauseous dose. Oils exposed to the air, especially in warm places, easily undergo changes, and the following precautions should be observed as regards castor-oil, cod-liver oil, emulsions of either, or of almond oil, often used in cough mixtures. Keep them always in as cool a place as practicable. Before giving a dose, see that the neck of the bottle is clean on the outside. Pour out the dose carefully, and clean the stopper and neck inside and out before the former is replaced; then cork tightly. The reason of this is that if a film of oil is left exposed to the air it soon becomes rancid, and in pouring the next dose some of the rancid oil goes

with it—enough to give a taste; and when the pouring ceases, the oil that returns to the bottle carries with it some of the rancid oil, enough often to set up a similar process in the bottle. Similar precautions are useful, but not so necessary, for syrups or thick solutions containing gum or sugar.

In administering oils (and we may take the castor-oil as a type) it should be remembered that a good deal of the objectionableness is due to the viscidity. Therefore, first heat the spoon by immersion in hot water, or in any other way. If the child is old enough to be allowed, or to have acquired a liking for, sapid things, it is well to squeeze a little orange juice into the hot spoon, then pour in the oil and squeeze a little more juice over it. The heat of the spoon makes the oil flow more readily, and the juice above and below renders it hardly recognizable. If the baby is so young as to object to the spoon *per se*, there is no use in trying to disguise the oil, but this heating of it or of the spoon is always helpful.

This is a proper place to say that we believe that much of the disgust manifested by children for medicines is simply imitation of their attendants. When, many years ago, we were told by an old physician that children rarely objected to cod-liver oil unless they had seen their elders make a face at it, we were surprised; but experience has convinced us of the correctness of the statement. So far as we have observed, more children actually like cod-liver oil emulsions, for instance, than object to them.

MEDICINES IN SOLID FORM

To little children, powders, pills, capsules, and tablets are often more difficult to administer than any liquid. This is frequently so because to them swallowing has been an automatic act, and when they endeavor to swallow, even with the best intent, a small object, it is likely to lodge in some part of the mouth over which the child has little control. This, and not the covering of the taste, is the secret of the

success of the old-fashioned device of hiding the pill or powder in a good-sized crumb of bread. A large and sufficiently soft bolus is thus formed which the tongue can readily manage. The draught of water acts in the same way. It can be swallowed, and with it goes the dose. This also is one of the advantages of the wafer-paper used in administering medicines. Common thin white tissue-paper will serve to hide a bitter powder if no better cover is at hand. It may then be taken as a pill, placed well back on the tongue and swallowed immediately with a full draught of water. The paper is harmless.

SWALLOWING MADE EASY

THERE are one or two points about the physiology of swallowing which, if understood, are helpful—namely, first, that swallowing is made easy by the action of the saliva moistening the mass to be swallowed; but if, to avoid taste, speedy swallowing without time being allowed for insalivation be required, or if by reason of fever the mouth be dry, swallowing will be more than usually difficult. Hence another reason for the drink of water. Secondly, that, while the passing of the bolus to be swallowed through the mouth proper is done by the muscles of the tongue, which are voluntary muscles even if they act unconsciously, when the bolus reaches as far back as the uvula it comes within the domain of muscles which act spasmodically and force it down the throat. Every child knows that if it allows a candy to get too far back on the tongue, it "slips down the throat." Hence, if by reason of nervousness or of anything else a pill cannot be swallowed, it is only necessary to place it upon the back of the tongue, and it must go. If there is left a sensation that it has "stuck" anywhere, a draught of water will remove it.

Generally speaking, a little tact in the management of children will avoid the unpleasant scenes so often associated with the giving of medicines.

RULES FOR THE SICK-ROOM

In taking care of a sick child, the same sort of common sense is called for as in any other nursing. The cardinal rules are watchfulness, quiet, calm demeanor, and cheerfulness. Fussiness and agitation are very communicable. Engage the child's confidence by strict truthfulness in whatever you say, and by gentleness in whatever you do. But gentleness is not to be understood as meaning weakness or lack of discipline. If a medicine or any remedy is ordered it is to be given, and a gentle compulsion is less exhausting than weak controversy. If there is any genuine obstacle to the execution of the physician's orders, if it be explained to him he can doubtless manage in some other way.

In any case in which a physician is called, write down his orders, unless he does so himself before he leaves, so that there shall be no misunderstanding. If several things are to be done, make a little schedule of the hours at which they are due. It is quite convenient to have a manuscript book, such, for instance, as school exercises are written in, in which to write the physician's orders. If on the opposite page a memorandum is made of the nature of the illness or of its symptoms and of the remedies, quite a useful guide is made up, which is especially applicable to the child concerned, perhaps to the entire family of children.

XIII

NURSERY EMERGENCIES

THE management of emergencies, due in most part to accidents, may be considered under the head of Domestic Surgery. In addition, there will be mentioned in this connection a few emergencies which are not strictly surgical, but must be met with surgical promptness. A large number of medical situations, more or less emergent, are considered in the second part of this book.

DOMESTIC SURGERY

THIS covers the care of some minor injuries, as well as the temporary care of more serious ones. Among the various wounds to which children are liable are incised wounds, or clean cuts; lacerated wounds, or tears and scratches; punctured wounds, such as are made by sharp, slender stabbing things—in the nursery, needles and splinters are commonest, and later fish-hooks and pointed tools are added. To these may be added punctured poisoned wounds, commonly the bites of insects, and, very rarely, the bites of animals which may be poisonous. In dealing with any wound, the first duty is to make sure that it is clean. If the wound be simply incised and made with a clean blade it will probably be clean enough if washed with simple boiled water, into which salt—a teaspoonful to the pint—is dissolved. If the water be as hot as can be borne, it will considerably aid in stopping the flow of blood. If the latter be not rapid, it may alone suffice. If blood spurts, an artery has been

cut, and the jet is best stopped by pressure either upon the spurting-point or by pressing together the lips of the wound. Pressure may be made directly with the fingers or with a bit of absorbent cotton, gauze, or linen. When all is clean and dry, the lips may be brought together neatly and so held by strips of adhesive plaster and covered with a pad of gauze and a bandage. All wounds upon the face require especially careful adjustment, on account of future appearances.

RAGGED WOUNDS

If the wound be ragged, such as is made by a scratching or tearing implement—nails, tacks, and many similar ones—more care will be required in cleansing the wound and in adjusting its edges, while the bleeding is usually more readily stopped. For this cleansing, an antiseptic solution will be needed. If no other is at hand, the salt solution before alluded to will do, but it is better to have a saturated solution of boric acid or a bichlorid-of-mercury solution. Tablets of this latter salt are sold, one of which, dissolved in a pint of water, makes a solution of one part in one thousand, the usual strength for use. Cleanse the wound carefully and thoroughly with a wad of absorbent cotton dipped in the solution used. When it is entirely clean, dry and close it as before. Remember that the solution is very poisonous if swallowed.

THE CLEANSING OF PUNCTURED WOUNDS

Punctured wounds require even more care in the cleansing, as it is not easy to be sure that nothing remains within. When everything has apparently been cleaned out let the part be soaked in the antiseptic solution before wrapping it up. A little different procedure is required according to the nature of the puncturing substance. A needle is usually not dirty, but is likely to break in the flesh. If any part projects, extract it with great care, pulling in the line

of the projecting part. If the needle be broken and the remainder imbedded, do not throw away the part which is found until the physician has seen it. It may aid him in finding the other part. Pins are often not clean, but do not break; their wounds need cleansing especially. Still more is cleanliness necessary after the extraction of a splinter, as the latter is quite likely to be foul. The splinter, if large, can be withdrawn with the fingers, but if small some sort of forceps or tweezers is necessary. Splinters under the nails are particularly troublesome, as they often break off close to the nail margin and cannot be grasped. In the absence of a physician or any proper instrument, a penknife blade may be used. It should be first washed and then made clean by holding it in the steam of a tea-kettle or in boiling water. The nail can then be scraped thin and notched with the knife, and the end of the splinter may then be reached. In case of failure, the splinter is loosened by the suppuration, and usually is thus easily dislodged. But this last process is painful, and may involve risks.

The difficulty in removing fish-hooks comes from the barb. They are best removed by pushing the point through the flesh if practicable, when the whole hook is drawn through, or the barb broken off and the hook withdrawn, as may seem easier. Occasionally they are so imbedded as to require a knife for their removal. Fish-hook wounds need the antiseptic application to be pretty thoroughly made.

The poison of insect punctures rarely causes more than local irritation. This is usually relieved by alkaline applications, such as ammonia or soda in water, by a solution of borax, one or two teaspoonfuls to a pint of water. Camphor tincture and alcohol are also much used.

The wound of dog-bite, while usually only a punctured wound, may be a poisoned one. The uncertainty in this regard is only indefinitely prolonged by killing the dog. If he be kept, and is rabid at the time of the biting, he will not long survive, and the necessary treatment of the wound may be instituted. In all cases of doubt, and especially if

the dog has been killed or, as in the case of a vagrant dog, has escaped, the wound should be cauterized with a hot iron, in addition to the cleansing with the antiseptic solution which is applied to every punctured wound.

In those regions where poisonous snakes exist, bites from them may occur. Until the physician arrives, girdle tightly the bitten limb above the wound, squeeze out all the blood possible from the latter, and lay on an antiseptic dressing.

BRUISES AND BUMPS

Bruises and bumps are among the commonest injuries of childhood. If the skin upon the bruised place is broken, the injury is converted into a lacerated wound, and is to be treated according to the general rules already given. If the skin is not broken, the treatment is directed to the diminution or prevention of the pain and swelling, as well as the subsequent discoloration due to the effusion of blood beneath the skin. The applications may be hot or cold, but they should not be alternately both nor half-way. If hot water, which is preferable, is used, persist with it. If hot water is not at hand or easily had, stick to cold water. The effect of either is increased by making some pressure with the cloth by which the hot or cold water is applied. A bump on the head may be attended with concussion of the brain, or stunning, which for the moment takes precedence of the bump itself in attention. The child in this case should be allowed to lie quiet. If the surface is cold, hot bottles or other sources of heat should be put about him. It is unwise to give alcoholic stimulants in any amount, as they increase the subsequent headache. Ammonia is better. Vomiting generally announces the commencement of the rallying.

Besides the water applications spoken of, alcohol and water, witch-hazel extract, and a variety of well-known things are in common use. It is, however, doubtful whether they have any advantage whatever over the simple water compresses.

SPRAINS

Sprains are wrenchings of the soft parts about a joint without injury to the bony parts. They vary greatly in degree. It is very important to be sure that the bones have escaped injury. Therefore a sprain of any considerable severity needs an examination, at least, by a physician. For milder sprains, in which there is no question of a break, the most successful treatment consists in putting the injured joint, if practicable, into water as hot as can be borne, the heat being kept up by additions of hot water. If this cannot be done, an ice-bag may be applied. After the joint is thus made comfortable, it may be made firm by the application of strips of adhesive plaster, when the use of the limb may be resumed. This plan of treatment is most applicable to sprains of the ankle. If there is reason to suspect a fracture, the injured part is to be put into as comfortable a position as possible and supported there until the physician can see it.

BURNS AND SCALDS

Burns and scalds differ only in their causation, the one being caused by dry heat, the other by hot liquids. Severe and extensive burns are among the gravest of injuries. Slight ones can be treated by putting upon the surface bicarbonate of soda either dry or in solution, or a solution of carbolic acid in water, a teaspoonful of the former to a pint of the latter. As the carbolic acid does not always dissolve perfectly without waiting, it is well to have the solution on hand, as it is useful for almost all antiseptic washes, as well as for burns. Oils are also useful to cover the surface, and the mixture of linseed-oil and lime-water, known as carron oil, while not very elegant, is very useful. Whatever is used for the application, the surface is to be protected from the air by a covering of cotton, gauze, or linen.

CAUTIONS AS TO FIRE

It is well to know and to teach servants and older children how to manage a child whose clothing has caught fire. It must not be allowed to run about. It should be thrown down, or throw itself down, to keep the flames from the face, and be wrapped in any heavy woolen thing at hand—rug, blanket, heavy woolen garment, or what not. When the fire is extinguished, the clothing should be taken off carefully, cutting it away from the burned parts to avoid additional injuries to these last. Stimulants, such as wine, spirits, coffee, or tea, may be called for if there is great shock.

FROST-BITE AND CHILBLAINS

Quite the opposite as to cause are frost-bite and chilblains. The frost-bites in children are usually of especially exposed parts, such as the ears, tip of the nose, and sometimes of fingers and toes. If after or during exposure to great cold any of these parts be noticed to be abnormally white, freezing may be suspected. The circulation should be stimulated by friction, while a sudden change of temperature is avoided. A favorite method of stimulation is to rub the affected parts with snow. Indoors, applications of ice-cold water may be made before the sufferer enters a warm room. The chilblain is an incomplete frost-bite of a part which has not been guarded against a sudden change of temperature, the minute blood-vessels having lost their tone from violent change. Chilblains may sometimes be prevented or mitigated by the same applications as are recommended for frost-bite. In strong, healthy children chilblains are distressing from their burning and itching; in feeble children they may even be a serious malady. The care of them, if they have been established, consists in keeping the feet dry, in wearing spacious shoes, besides sometimes making soothing applications. The itching sometimes yields to alkaline baths, sometimes to simple cold foot-baths. For the feeble, tonics are necessary.

REMOVAL OF FOREIGN BODIES

A common mischance of the nursery is a foreign body in the eye, in the ear, nose, or somewhere in the alimentary canal. Only rarely does one get into the air-passage. With the exception of things in the eye, all these accidents are the result of the child's own meddlesome habit of tucking away things. In the eye may be lodged cinders, dust, small particles of any kind, as well as loosened eyelashes. Any of them may give a good deal of discomfort, or even suffering, if allowed to remain. A convenient instrument for the removal of such a body can be made by winding a bit of absorbent cotton about the end of a wooden toothpick or a similar bit of wood or a tape-needle. When it is ready, look at the eye to see if the object to be recovered is in sight. If so, it can be quickly wiped away with the swab just made with a sidewise motion, the child's head being firmly held meantime. If it is not in sight, depress the lower lid and search. If this fails, the upper lid must be searched, and perhaps turned over. This is done thus: First, the upper lid is seized by its margin and the lashes and drawn down over the lower lid. The motions of the eye, involuntary or, in the case of an older child, voluntary, may dislodge the object, so that it will be found on the outside of the lower lid when the upper one is released. If this fails, seize the upper lid as before, lay upon its outer surface some small cylindrical thing, such as the small end of a penholder, hold it firmly, and turn the lid up over it. Examine the exposed inner surface, and if the object is found, wipe it off as before described. Small fragments of steel often lodge themselves too firmly for removal by these gentle measures, and a physician's skill and appliances are needed. If an eye is wounded, only cold applications are permissible until the physician comes.

Substances in the nose may be expelled by nose-blowing or by sneezing if excited by tickling or otherwise. Clumsy manipulation sometimes wedges them in more firmly than

before. Therefore, before endeavoring to remove a foreign body examine to see if it can be easily gotten at, and, if so, whether you have a suitable extractor. The bent, round end of a hairpin can often be made into a successful implement. In the majority of cases it is safer to leave the case to the physician.

The same caution applies to things introduced into the ear. Often the difficulty which the physician experiences in removing a foreign body is largely due to previous unskilful attempts. If the body does not fall out when the child is laid with that ear down, or if it does not come out with gentle syringing, domestic attempts would better stop. Little harm can arise from its temporary stay in the ear-passage.

Foreign bodies in the throat—that is to say, in the pharynx—may sometimes be dislodged by inverting the child and giving it a smart blow on the shoulders. Sometimes the bodies are sufficiently visible to be extracted by the finger while the child is inverted. If the body has been swallowed, —*i. e.*, has gone into the stomach—the most advisable plan, if the child be old enough to take such articles with safety, is to give it bulky food, such as potato or bread, the body being usually carried through the alimentary canal with them and being found in the fæces.

NOSEBLEED

Various causes combine to make nosebleed a common occurrence. It is in later childhood that it occurs, rather than in infancy, and in childhood it is rarely alarming in extent. Among the common, as well as the most useful, domestic remedies are quiet, recumbency with head raised, cold to the back of the neck or to the root of the nose between the eyes, pressure on the nose at that point, pressure upon the upper lip, and the raising of the arms high above the head. If the bleeding be from a blow upon the nose, pains should be taken to make sure that this organ is not broken. It is sur-

prising how frequently such injuries are not recognized until deformity has occurred.

RESUSCITATION IN DROWNING ACCIDENTS

Drowning is fortunately a rare accident, but when it does occur the efforts at resuscitation must be immediate. The efforts of a bystander applied at once may succeed. No effort, even the most skilful, can avail after much delay. Therefore, as soon as the body is taken from the water to a place of safety, work should be begun. For popular use, a method of resuscitation needs to be not only efficient but simple. To the writer, the method of Dr. Satterthwaite seems, on the whole, to unite these qualities. It is briefly described below.

1. While one is at work upon the drowned person, others, if present, should endeavor to get dry covers and clothing—their own will do—and hot water, or make a fire by the water-side to heat articles. If nothing else can be had, the stones upon the beach can be heated.

2. The operator first endeavors to empty the water from the patient. "To do this effectively, roll the person over on the face, which should be a little lower than the body; if the bank be shelving, let the heels be higher than the head; then wedge open the mouth and keep it open by a bit of wood or by a knot in a handkerchief. The tongue should also be depressed. Then, getting astride of the person, press with the flat of the hand upon the abdomen, so as to push up the diaphragm. In half a minute, or probably less, the water will be driven out sufficiently to allow efforts at artificial respiration to be made.

3. "Then turn the person on to the back, place him in a horizontal position, keeping the mouth wedged open as before and the finger on the back of the tongue, and make pressure again with the hand upon the abdomen, so as to press the diaphragm upward. Make pressure slowly at first, and then force the air out. Then withdraw the hand, that the

diaphragm may fall and the lungs inflate with air. . . . At first make three or four movements in a minute, then increase to ten or fifteen, and persevere at that rate until there are evidences of returning respiration or it is plain that life is extinct."

This plan permits the simultaneous use of the Sylvester method, if one familiar with it be present, but for those unused to such emergencies complicated methods are apt to defeat themselves. Rubbing the person, giving ammonia to smell, and, above all, the use of hot applications—hot water if it can be had—at as great a heat as the hand will bear, are valuable. If the patient revives, he is to be taken to a quiet place, where hot broths, beef-tea, hot tea or coffee, or alcoholic drinks in moderation may be given.

CONVULSIONS

Probably the most alarming emergency in the nursery not due to an accident is the occurrence of convulsions. The causes of these are manifold, and the management of them beyond the range of domestic medicine. The drugs most relied upon by physicians, such as chloroform, its relative, chloral, and morphia, are not to be used without knowledge. If a physician can possibly be had, he should, of course, at once be sent for. While he is coming, the parent should endeavor not to do harm. The child should be kept as quiet as possible. The bed should be covered with a layer or two of blanket, and the child, undressed with the least possible disturbance, be laid upon it. Then he should be enveloped in a mustard pack, or, if the mustard be not at hand, in a simple hot pack. This is given by wringing out a sheet in hot water and applying it quickly all over the child. For the mustard pack, the mustard is added to the hot water before the sheet is dipped. The usual strength is a tablespoonful of mustard to a quart of hot water. A smaller amount of mustard will often suffice. When the skin is decidedly red, the pack may be removed. This will usually occur in ten

minutes. It must be watched, as the child can give no warning, and the sensibility of the skin varies; a mustard burn is an ugly thing to heal.

In the rare instances where no physician can be reached, in the absence of definite knowledge of the cause of the convulsion, it is fairly safe to assume that some digestive derangement is at fault. The bowels may be cleared out by a full enema or by irrigation, and if there is reason to suppose that food is still in the stomach itself, an emetic of the syrup or the wine of ipecac may be given. After the subsidence of the convulsions the child is to be kept quiet, and its nervous system still further soothed by the use of bromides for a few days. But it is to be always remembered that next to the quieting of the attack of convulsion, the recognition of the cause of it and the prevention of repetitions is the important matter.

ACCIDENTS DUE TO POISON

Accidental poisoning in the nursery is rare. If poisons are properly kept, or still more properly excluded, there is very little possibility of accident. Whenever it is thought necessary to have in the house a poisonous remedy, it should be kept safely out of reach of children, and if it be, as is the pharmaceutical rule, put in a colored or marked bottle and a memorandum of the antidote gummed to it, there is little chance of a mishap. Most such accidents as do occur are due to articles not medicinal, which are left about or allowed to fall where a child may get them; such, for instance, are match-heads, causing phosphorus poisoning; oxalic acid, used to clean boilers and copper work; in the country, Paris green (aceto-arsenite of copper), used to kill insects.

In the first place, it should be said that for every poison which has been swallowed an emetic is proper, although for the removal of some of them it may not be very efficient, owing to the blunting of the sensibility of the stomach. In

any case, therefore, it should be tried. The emetic should be one of prompt action. Therefore, mustard and water, and strong soap-suds (laundry soap preferred) are among the best emetics.

If the substance swallowed be an acid, it should be neutralized by an alkali. Here, again, suds from coarse soap is available and efficient as an alkali, as well as an emetic. Lime-water may be in the house, and can be used. So may chalk, the refined chalk known as whiting used for polishing silver, or magnesia. For oxalic acid, lime-water or chalk is best.

If an alkali (potash, soda, lime, or ammonia in some irritating form) be swallowed, an acid is called for. Vinegar and lemon-juice are those most likely to be at hand.

Carbolic acid deserves especial mention, as it is an acid only in name. The best antidote is thought to be one of the alkaline sulphates, such as Epsom salts or Glauber's salts, both in use as cathartics. The Epsom salt is the more likely to be in the house. Give it freely and promptly. Creosote is comparatively little used nowadays, but poisoning from it is to be treated as if from carbolic acid.

After the emetic and the antidote have been given, it is proper, if the poison is of an irritant nature, to give milk or white of an egg, oil, and soothing drinks. This is especially true of irritating metallic salts, such as antimony (tartar emetic), arsenic (Paris green), verdigris or blue vitriol (both copper salts), corrosive sublimate (mercuric bichlorid), sugar of lead. But the exception of phosphorus must be borne in mind, because any oil renders phosphorus more soluble and more poisonous.

Phosphorus poisoning is most likely to come from matches. A child may get a package and suck off the highly colored heads. The desirable emetic in this case is the sulphate of copper (blue vitriol), since it is not only an emetic, but the antidote as well. It may be repeated after vomiting has occurred. If time has elapsed for some of the poison to have passed into the bowels, they should be cleared with Epsom salts.

For any poison causing great depression, such as aconite, chloral, antipyrine, or phenacetin, stimulants, like alcoholic liquors, coffee or tea, and heat, are proper.

For poisoning from any preparation of opium (morphine, laudanum, paregoric, etc.), the prime things after the emetic are to give coffee and to keep the patient awake by motion or in any other way. The physician will have additional resources.

Occasionally a case of poisoning occurs in the country from the eating of some part of one of the plants of the solanaceæ, the stramonium or jimson weed, the tobacco plant, the belladonna, or deadly nightshade, the last found in gardens but not a native plant. To these may be added some poisonous mushrooms, especially the poisonous species of amanita. The stomach must be emptied at once, and the bowels soon after. In the case of all these plants the poison is rendered insoluble, and therefore less active, by tannic acid or tannin, which is sometimes in the house. If in no better form, it can be found in a strong decoction of tea. The agreeable infusion made by skilful tea-makers is not so useful for this purpose as the decoction which the cook keeps stewing all day on the corner of the stove, since the latter contains all the tannic acid which can be extracted from the leaves.

Of course, whatever the poison, medical aid should be summoned if possible.

XIV

THE HOUSEHOLD PHARMACY

IN the previous chapters various medicines or remedies have been mentioned. It may be helpful to enumerate them again and to make a few suggestions as to their uses. It should first be said that if medicines are to be kept at all in the house, they should be together in a place provided for them and be always in order. For the purpose, a little cupboard is convenient, such as sold in furniture shops for the purpose. But a costly one is by no means necessary, and a little ingenuity will make a very convenient one from an ordinary box if nothing better is at hand. In the writer's opinion, it is far better to have a cupboard of this rude sort than to allow medicines to stand about on mantels, bureaus, on closet shelves, or in drawers mixed up with other things. Such want of system invites accident, and in emergencies often defeats the best intentions. The medicine cupboard should be in as cool a place as possible, and it should have a door or curtain, as many remedies keep better away from the light.

CONVENIENCES

AMONG the conveniences of this cupboard are measuring-glasses. Spoons have been used for generations as measures, and they do very well, but they vary somewhat in size, and different persons fill them more differently. Glasses marked by teaspoonfuls and tablespoonfuls are for sale, and the druggist's graduate glass is still more accurate. The latter is now sold not only by druggists, but by dealers in photo-

graphic goods at very moderate prices. Still more useful is a little graduated glass to measure minims. These save the trouble of counting and are more accurate, since the minim is a fixed measure and is usually meant when a dose is stated in "drops," while the actual drop varies in size with the liquid and the orifice from which it is dropped. If such a measuring-glass cannot be obtained it is well to obtain from the pharmacist a medicine-dropper, which he finds delivers minims pretty accurately. In using it, the point is immersed in the liquid, the bulb compressed to expel the air, and when the pressure is released some of the liquid rises into the tube, whence it can be slowly pressed out, drop by drop. For putting liquids into the eye the droppers having a much finer outlet and giving small drops are commonly preferred. Whatever measure is used, always cleanse it thoroughly before it is put away.

The fever thermometer, if one is owned, should be kept with remedies.

Most households possess an ordinary bag or "fountain" syringe. Having various nozzles, most things may be done with it. Scald the nozzle selected before using, as contagious ailments are sometimes communicated by reason of persons making unauthorized use of another person's syringe.

Besides the bag syringe, a hard-rubber piston syringe, to hold six ounces, is useful in the nursery. Better yet, perhaps, is the ordinary bulb syringe, with a soft-rubber nozzle. The latter can be easily made extemporaneously from a piece of small rubber tubing slipped over the hard nozzle. For high enemas, a soft-rubber catheter is used, but as it is likely to spoil if kept without using it would better be bought when required.

FOR SURGICAL NEEDS

For the surgical emergencies described, the following things are convenient:

A pair of tweezers, preferably strong enough to hold tightly to whatever they may grasp, also with rather fine

points, so that they may grasp splinters under the nails or other things in cramped situations.

Absorbent cotton.

Gauze or old linen.

These articles should be done up into small packages, so that they may be kept clean until required. They may be bought in such parcels. Gauze can be easily and cheaply made from cheese-cloth, which is boiled and dried, cut up into yard lengths and then folded into bundles which will go into an ordinary preserving-jar. Put each piece into a jar with the cover loosely on, place it in a slow oven and heat, stopping if signs of browning appear. Fasten the cover of the jar, and the gauze will be clean until used. Cotton or old linen may be made sterile in the same way.

Bandages may be made of gauze, linen, or cotton; the first is cheapest and best. They may be bought, if preferred. They should be of different widths, from one inch wide for children's hands to two and one half inches for their limbs. For adults, still wider ones are used. They should be rolled up firmly into cylinders. The lengths for the nursery should be from one to two yards.

For adjusting wounds nicely isinglass plaster is best. It adheres by moistening. Never wet the plaster for a wound in the mouth. Take a small wad of absorbent cotton or gauze, wring it out of boiled water or boiled water containing salt or some other antiseptic. Moisten the plaster with this wad.

When a more retentive dressing is needed, the rubber plaster now so generally sold on spools is most convenient. It adheres without warming. Half an inch is a convenient width for nursery use. A similar plaster, containing zinc oxide, is in use for irritable skins.

The wads of cotton or gauze just alluded to have displaced sponges for cleansing wounds in domestic surgery. They are more certain to be clean, and are thrown aside as used.

A one-ounce vial of collodion, with a camel's-hair brush fixed in the stopper, is very convenient for covering scratches,

etc., after they have been cleansed. A finger should be kept over the mouth of the vial whenever the stopper is out, as the ether of the collodion rapidly evaporates and leaves a hard unmanageable mass behind.

Vaseline or cosmoline has become a household convenience. For the dressing of wounds, it is best bought in tubes with screw caps, like an artist's colors, as that not used is thus more readily kept clean. When needed the vaseline is squeezed out.

DISINFECTANTS

It is doubtful if the more poisonous antiseptics should be kept in the house, except during the time of their constant use. Boric acid, used in the form of a saturated solution, alcohol, and a solution of common salt in boiled water, a heaping teaspoonful to a pint, serve for most nursery surgery. The boric acid should be plainly marked, as it is sometimes mistaken for milk-sugar. But this rule of plain labeling must be applied to every remedy.

Oiled silk or thin rubber is convenient for covering dressings of all sorts. If these are used and it be desired to keep them for further use, they must be placed in boiling water for disinfection before they are put away.

Whenever an instrument or a basin is to be used, it should be made clean by heat. Instruments of steel are to be boiled, a little bicarbonate of soda being put into the water to prevent rusting. An agate or metal basin can be exposed to a still higher heat than that of an oven, as it has no temper to be considered, as has the steel instrument.

MEDICINES

The medicines to be kept in the nursery pharmacy need not be many. To begin with, a good many of them are found in the kitchen or pantry, and may as well remain there until needed. Thus, alcohol is often in use for the spirit lamp. Whisky or some similar stimulant is more likely to

be in the house than is necessary. The coarse preparations of ammonia now very generally used in the household will serve perfectly well as a stimulant to the nostrils, but not for internal use.

Bicarbonate of soda (baking soda) is pretty certain to be in the kitchen. It is useful as an application to burns and as an antidote to acids swallowed.

Olive oil is useful as an external application, especially for burns, as a lubricant, as an ingredient of enemas, and as a remedy, after vomiting has been produced, for almost all poisoning from irritating substances.

Salt and *mustard* are among the best of prompt emetics. The salt may be dissolved in water in almost any proportion. It also, if added to an enema, increases its activity. Its use as a disinfectant has just been described. Mustard as an emetic is very prompt. An adult may take a tablespoonful of dry mustard, if mixed with an equal amount of molasses and a glass of water. The object of the molasses is to insure complete mixture. In the nursery, a teaspoonful would be enough. Soap-suds also furnish a useful emetic.

Meal of any sort will furnish poultice material in an emergency. *Turpentine*, useful for stupes (see p. 156), is usually kept for cleaning.

This considerable number of remedies being found among the household articles proportionately diminishes the number which need be kept in the medicine-closet.

The list of medicines which may be used is a long one, but a very short one will contain all the drugs that would better be in a family medicine-closet. Medicines recommended by a physician for a particular child or for members of the family for whom they are suitable may be added from time to time, but should be labeled and kept track of by some method, as suggested on page 179.

For general use in emergencies, there may be kept as *cathartics* castor-oil and triturates of calomel. The advantages of each, the methods of keeping and of administration, are mentioned on pages 159 and 165.

EMETICS

For general use, the *syrup of ipecac* is best. It is safe, as it produces no harmful effects beyond the vomiting. It is especially applicable when, as in spasmodic croup, it is desired to produce a certain amount of relaxation from the preliminary nausea. The dose is from half a teaspoonful to a teaspoonful, according to the age of the child, repeated in twenty minutes if it has not sooner acted. For immediate production of vomiting, without nausea, mustard has already been recommended. *Powdered alum* acts in the same manner. The dose is usually about a level teaspoonful mixed with syrup. Another use of the syrup of ipecac is as an expectorant—that is to say, to "loosen" the cough of laryngitis and bronchitis. The syrup can be mixed with water in such proportions that a teaspoonful of the mixture shall contain one or two drops of the syrup. This may be given by the teaspoonful every half hour, but the dosing must be stopped if nausea is manifested or if the symptoms are relieved.

CARMINATIVES

Carminatives are useful for the relief of colic. The most efficient and agreeable are the *spirit of peppermint* or of *anise.* Fifteen or twenty drops may be added to a teacupful of hot water, and the well-stirred mixture administered by spoonfuls to an infant. An older child may drink as much as it pleases from the cup. For colic due to acidity, an antacid is often useful. This is one of the uses of lime-water. Another useful antacid is the bicarbonate of soda. This compressed into tablet form, with the addition of peppermint, constitutes the soda-mints of the shops. They are quite convenient for ordinary emergencies. If they are to be used they should be bought fresh—*i. e.*, with a strong odor of peppermint—and kept in a tightly corked, wide-mouthed vial.

REMEDIES FOR FEVER

For the relief of fever, the writer believes that the time-honored sweet spirits of nitre is safer and better for household use than any other remedy. It has no depressing after-effects, such as make aconite and the popular coal-oil derivatives so unfit for domestic use. Besides promoting perspiration, it calms nervous irritation and excites a flow of urine. For this last reason, it is much used when this excretion is scanty. The dose for a child would be five to ten drops, according to age, repeated hourly. A convenient way is to put half a teaspoonful or more into a glass of cool water and let the child, if above two years of age, drink from this glass, using the whole, if he chooses, in the course of two hours. Keep the mixture covered in the intervals of drinking. The medicine itself should be kept in a small vial, as nearly full as convenient, tightly corked, and away from the light.

BROMIDES

Another soother of nervous irritability is one of the alkaline bromides. The bromide or sodium suits the stomach better than the potassium salt. It can be had in tablet form, each tablet generally containing ten grains. An infant of six months would better make four or five doses of one tablet. The tablet can be dissolved in water, and the proportionate part given. Older children can take larger doses. This drug is not, however, to be given carelessly.

OPIUM PREPARATIONS

For the relief of pain, no drug is so efficient as opium, but it is badly borne by children. For nursery use, the only preparation admissible—if any be—is the *paregoric elixir*. It contains opium in the proportion of one to two hundred and fifty parts. It also contains camphor and anise, so that its soothing effect is out of proportion to its opium

strength. An infant should have no more than five to ten drops. It is customary to print directions upon the label. While its action in emergencies and under proper restrictions is very pleasant, its frequent and indiscriminate employment is only to be condemned.

VARIOUS ANTIDOTES

When speaking of accidental poisoning, a number of antidotes pretty certain to be in the house were mentioned. For dwellers in towns it is useless to provide any others. But by those living remote from a pharmacy, two or three may be found useful, if only from the sense of security they give. These are: *Tannic acid*, to be used as an antidote for the various poisonous plants and mushrooms which omnivorous children may eat (see p. 181). It would better be kept in powders of five grains each. In case of poisoning, give one or two powders, according to the child's age, dissolved in water; repeat every quarter of an hour for several doses. The emetic, of course, is used first.

Epsom salts (see p. 180) is believed to be the best antidote for carbolic acid. Dissolve a tablespoonful of the salt in a tumbler of water. Give as much as the child will take. It may be repeated, as the over-effect of the salt is trifling compared with that of the carbolic acid.

Sulphate of copper (see p. 180), or blue stone, is recommended as the best emetic for phosphorus (matches) poisoning, because of its having the additional effect of being an antidote. This effect has been disputed, but its emetic power is unquestioned. The emetic dose for a child is one or two grains, and powders or tablets of one grain each make a convenient form for keeping the drug.

PART II

QUESTIONS AND ANSWERS

I

MINOR AILMENTS AND TROUBLES

THE CAUSES AND TREATMENT OF COLIC

What is the cause of colic?
Can anything be done to prevent it?
How can a child be relieved when suffering from an attack of colic?

Colic generally means a painful affection of the intestines, but the name, with certain qualifying adjectives, is applied to other painful troubles. There is, besides the pain, sometimes more or less spasm of the bowels. The causes, as far as applied to infants or young children, are usually connected with the digestive process, such as indigestion from improper or excessive food or drinks, constipation, fermentation of food—producing gas, etc. Besides, we may mention chilling, cold feet, etc.

Watching for the dietetic error which causes the pain and avoiding the repetition of the cause are usually effective. If the child has a feeble digestion it will be necessary to improve, if possible, the digestive power, and to suit the food to the enfeebled power while it exists, and, in like manner, to remove as far as possible any recognized tendency or assignable exciting cause. It is true that some children during the first months of life show a tendency to colic for which an adequate cause cannot be easily discovered. But these cases are relatively rare.

The usual simple and effectual remedies are the following: Heat to the feet and bowels; the heat should be as great as can comfortably be borne, but short, of course, of a degree that would damage the skin. If there be gas in the stomach or bowels, a change of position, such as putting the child stomach downward on the hot application, together with rubbing of the abdomen front and back, often seems to favor the escape of the gas, with relief of the pain. If the gas be in the lower bowel it may escape if a soft tube, such as a large catheter, be passed into the bowel. So also a warm enema may aid the expulsion of the gas. Internally, hot water, either alone or with carminatives, such as a few drops of peppermint or anise cordial, or gin, or brandy, or, best of all, although disagreeable in smell, tincture of asafetida will be found useful. This latter may be given by the mouth or injected into the bowels. If the pain is severe, small doses of paregoric—proportioned to the age of the child—may be given.

COLIC AND TEETHING

Will cutting the lateral incisors give a baby colic? It seems to in the case of my baby, ten months old. I give her capsicum tablets for it. Is there anything better that you can recommend?

The cutting of teeth is charged with many digestive disorders. The latter are, however, now attributed, by those giving attention to such things, more frequently to changes in the development of the digestive organs which occur at the same period as teething. It is, therefore, safer to say that such symptoms accompany rather than depend upon teething. Capsicum, the oils of mint and anise, in the shape of cordials, or the tincture of the drug-shops—a few drops in hot water—and many other things will relieve colic. Hot water alone is often efficient. Better is it, if possible, to remove the cause.

COLIC ACCOMPANYING NURSING

What is the cause of my baby girl, two and a half months old, having colic *when she nurses?* She may have been perfectly quiet before she began, and oftentimes will only take one or two swallows when the colic strikes her, and it is only by working with her for some time that she can get enough to satisfy her. The only time that she is not troubled is when she takes her one night nursing.

Two physicians have given her simple remedies for indigestion, but they have had no effect; others said the milk came too fast, but the above sentence disproves that, as naturally at night it comes faster than at any other time. Can you tell me what the cause is? She sometimes sleeps the whole morning, and anyway is nursed only every two and three quarter hours, yet always has it. Have you ever had a similar case? I have not met any one that had ever heard of it. I am not alarmed about it, but I should like to know of something to relieve her at that time when she ought certainly to be easy. She is not one bit sick, but, on the contrary, is thriving nicely.

Such cases are by no means rare in infancy or in later childhood—that is to say, the taking of food into the stomach excites prematurely the stomach and intestines to action. We do not know enough of your condition of health or of your baby's to tell you what is the exact cause in this case. Sometimes the trouble is due to over-irritability of the digestive tract in the child, sometimes to some unsuitableness of the food—milk, or whatever it may be. In older children, as well as in infants, it is not rare to see a meal—whether from breast, bottle, or from table—frequently or even usually interrupted by a movement of the bowels. Doubtless your baby's case belongs to the same group, although the effect seems to be limited to colicky pain. The fact that the disturbance is less marked at night does not quite clear up the matter, because your milk might be better for your rest, or baby's digestion better for her rest. Take *one* of your two physicians and let him follow out the matter.

"THREE-MONTHS' COLIC"

Please tell me something about the legitimate remedies for "three-months' colic" in infants. I am entirely without experience, and, with the advice of nurses, friends, and doctors, have rung the changes on "carminatives"—catnip-tea, soda-mint, gin and fennel, etc. Are these all harmful?

Catnip-tea, given hot, and soda-mint, dissolved in hot water, are both safe and useful in relieving colic; but it is best to search for causes. Children have colic at all ages. It is, perhaps, more frequent at the age mentioned than earlier, because the little one has gained more independence of action, kicks its covers off and so gets chilled, and is in warm climates or seasons often placed upon the floor. Besides—and perhaps this is most important of all—certain processes of development in the intestinal canal make the child at this age more susceptible to derangement from all causes. A child that has shown the colicky tendency should be carefully protected about the bowels at all times; should not be allowed to become constipated; if fed, should have its food prepared with great circumspection; if suckled, its mouth and the nipple should be kept particularly clean to avoid any source of fermentation which might act upon the milk.

CURE FOR COLD HANDS

Can you tell me why my little boy of ten months has almost always cold hands? He seems to be in good health otherwise.

The commonest causes of cold hands in little children are poor nutrition, feeble circulation, or undue perspiration. The cure must lie in the improvement of the nutrition and tone, but some help may come from the addition of salt to the daily bath, and the sponging of the body, rather than its immersion in water.

COLD FEET AS A CONSEQUENCE OF SHORT CLOTHES

Can you tell me how to keep my little girl's feet warm through the day? She is eight months old, has always been strong and well, is plump, and has rosy cheeks. I put her into short clothes a month ago, putting on long woolen stockings and the little soft, solid shoes that come for the first wearing. At night, when I undress her, her little feet are very cold and clammy.

It is not very easy to keep quite warm the feet of a baby who is short-coated in winter. The first effect of shoes is rather to retard the circulation in the feet by diminishing the play of the muscles. Little ones who are very vigorous often have the feet and hands considerably colder than the body or the limbs. The best way we know is to have the shoes *and stockings* very large, to make sure that the feet are quite warm when put into their coverings, and if this alone does not succeed, to take off the shoes and stockings in the middle of the day, rub and warm the feet, and reclothe them. See also that the napkins are not so tight as to prevent exercise of the limbs.

PERSPIRING FEET

My little girl, aged four, perfectly healthy apparently, has each night her stockings and shoes damp with perspiration. I am sure it cannot be because her feet are too warm, for our home is in the country and the floors are not over-warm. Can you suggest the cause and cure? Though she never complains, it would seem as if her feet must be cold from the dampness.

Perspiration of the feet is sometimes a personal peculiarity, the cause of which is not easy to discover, or is practically impossible to remove. But as a common cause is an imperfect circulation, it is always well to search for anything that may retard the flow of blood from the feet. See if the stockings and shoes are wide and easy; if there is any undue

tightness at the knee, etc. Watch if the palms also perspire when covered by mittens; if so, it will show that the peculiarity is a general one, and not confined to the feet. It may be noted that people of the "rheumatic" habit are thought to perspire more than others.

ENLARGEMENT OF GLANDS

My baby has a kernel about the size of a small bird's egg on the left side of her neck, also two behind each ear the size of peas. The kernels have been there two months. Can you tell me if that is anything serious? She is thirteen months, has six teeth, and is a healthy baby; although she looks delicate, she is very bright, walks and talks.

The kernels are enlarged lymphatic glands. Their enlargement has come from an irritation elsewhere, such as enlarged or inflamed tonsils, some eruption, scratches, or what not. The glandular enlargements often persist long after the trouble which gave rise to them has been forgotten. They are probably not serious. Sometimes they gather, or have to be removed, but in the great majority of cases the glands return to their natural size with the disappearance of the exciting cause.

PROBABLE CAUSE OF MOUTH-BREATHING

Will you kindly tell me how I can break my little baby, two months old, of the habit of sleeping with his mouth open? It seems to me advisable to stop his doing so at once.

Inasmuch as the habit of sleeping with the mouth open is usually due to obstructions in the nasal passages, it is very difficult to break up the habit until the obstruction is removed. In older children the usual obstruction is from an adenoid growth in the back of the nose (pharynx). But in a very young baby this is probably not the case. Look into the throat to see if the tonsils are large. Examine the nos-

trils to see if they be wide enough, or choked with mucus. If you cannot find a cause, ask your physician.

ENLARGED UVULA

I am prompted to ask your advice concerning what seems to be a chronic enlargement of the uvula and soft palate in my little four-and-a-half-year-old son. To this enlargement our local physician attributes the child's inability to speak plainly and his difficult breathing at night. But this same physician assures me the child will outgrow the trouble. The boy is a strong, sturdy child, weighing forty-six pounds, and of good height, thoroughly healthy, so far as I know. But the slightest cold settles immediately in the uvula, causing the child untold trouble as soon as he lies down, with an almost constant throat-cough, which very often results in nausea. His breathing at night is always impeded; his mouth is, at night, usually open, and he snores very audibly. Altogether the symptoms are to me distressing, and I turn to you for advice as to what should be done, since it seems to me a case which should not be left for the child to outgrow, if, indeed, he ever may.

We should advise, first, the examination of the pharynx to see if there is also an obstruction there besides the enlarged uvula. If there is, the cause of the obstruction would much better be removed. If the pharynx is clear, then we think such a uvula as you describe, which is sufficiently enlarged to impede breathing, should be cut off, even if in time it would shrink, for the boy will suffer damage in the meantime.

PATCHES ON THE TONGUE

For a year past I have noticed in regard to my little boy, who is now two years of age, that the tongue is very often covered here and there with small white patches. Sometimes they are red in the center with a white rim. The child has always been very pale, but, with that exception, has seemed very well and full of life, scarcely ever having suffered from even a

cold. He weighs thirty pounds, and his flesh is firm and solid. He enjoys a good appetite, and I have always tried to be careful concerning his diet. He takes cereals for breakfast at 8 A.M., and nearly always calls for a second saucerful, seldom taking anything else, except a cup of milk and an oaten flake-cracker. Occasionally he will eat the yolk of a soft-boiled egg with bread for a change, and he is fond of apple-sauce, but generally takes what I first mentioned.

Until within a couple of months he took a lunch of oatmeal crackers and milk at eleven, and his dinner at two. He has now dispensed with the lunch and takes his dinner at one, eating a plate of chicken, beef, or mutton broth, with rice, bread and butter, and a cup of milk. He varies this with cream toast or bread and butter and a little beef, mutton, or chicken cut up fine, but eats very few vegetables, almost none. He likes plain rice pudding, junket, or custards, which I occasionally give him for dessert. He takes his supper at 5:45, of a couple of slices of bread crumbed in warm milk, after which he is off to bed, and is a good sleeper. He never asks for anything between meals, though I have given him an apple at times, which he has seemed to enjoy. I peeled it and cut it in small pieces. It did not seem to hurt him, though I thought it best to ask your advice before continuing it.

Can you enlighten me in regard to the patches on the tongue—the cause, and what to do to overcome the trouble?

In all probability the patches are those of common sprue, although the child is rather old to have this disorder. The real cause is a microscopic plant akin to the yeast-plant. It may be acquired from the air at any time, but some conditions not those of perfect health seem necessary to its growth, the chief of which is acidity of the secretions of the mouth from any cause. Sweet food, starchy food, the remains of milk, etc., may ferment in the mouth and give the requisite condition for the development. Prevention is best secured by being careful about sweets and cleansing the mouth after eating, using an alkali to secure alkalinity of the mouth. Lime-water will do, but a favorite one is borax, which unites with slight alkalinity the disinfecting power

of the boric acid. A solution of borax with a little extra boric acid added is very good—say, dissolve a heaped teaspoonful of powdered borax in a teacupful of water, then add half a teaspoonful of boric acid and stir until the whole, or as much as possible, is dissolved. First clean off the spots as well as you can with a soft rag over the tip of your finger. Then wash the tongue well with a rag dipped in the solution. The latter is better if you add to it a dessertspoonful of glycerin. If the mouth is kept alkaline, as it naturally is, the plant will hardly grow. Of course, the kinds of food likely to favor the growth should be restricted during the presence of the growth—that is to say, starchy or sweet foods.

There seems to be nothing out of the way in the diet if the digestion is adequate, and you do not speak of anything to the contrary. There are few fruits which are distinctly useful except when fresh, although many are admissible. So of vegetables; there are very few, we think, which are really advantageous at two years of age. Yet some children can bear them without evident indigestion. The parent usually thinks of a dietary as containing all the things that can be given without positive and immediately recognizable harm; the medical adviser, on the other hand, thinks of a dietary as made up of articles really desirable as food, and some innocent indulgences to tempt the palate. Between these plans a good deal of room for judgment is left, and the best of this judgment lies in the application of general rules to the particular case. Our own inclination is always to give rather less than the digestion could carry—that is, to leave a little reserve digestive power.

COATED TONGUE

My two little girls have always been very healthy children, neither having had even the common eruptions or rashes incidental to infancy; but the elder, three and a half years old, has always had a white-coated tongue, except at very rare inter-

vals. She is the picture of fair, robust, rosy childhood, perfectly sound in every way apparently. Can you account for this seemingly incongruous case? I sometimes feel anxious about it, as such a tongue is usually regarded as indicating a disordered stomach; but this cannot be so, as I am and always have been particular as to food, regular hours and habits, clothing, etc., which are such as I think you would approve of.

We cannot, of course, tell why the child's tongue is white. It is noticeable in some children and adults without any corresponding symptoms of stomach disorder. And we have noticed that some persons, when using a milk diet, even if with pleasure and apparent benefit, have a slight whitish coat or coloration upon the tongue. If you can find no other evidence of ill health, we think you may safely disregard the symptom.

THE PREVALENCE OF "SORE MOUTH"

Is sore mouth ever epidemic among young babies? A great many have had it in the locality where I live.

The difficulty of answering this question lies in its vagueness, the writer apparently supposing that sore mouth in children is always the same thing. There is, first of all, the catarrhal sore mouth, which is sometimes associated with teething or with any irritation of the mouth, and which has been known to follow so slight a cause as crying or too long use of the voice. The kinds of sore mouth that are sometimes very prevalent are the aphthous variety, popularly the "sprue," which is often seen in infants with disordered digestion or those who are somewhat debilitated. Under local depressing circumstances, such as dampness or unwholesome situation of the house, the disease may be very prevalent. Another form—popularly "thrush"—is due to the presence of a parasitic growth, and this may be propagated by contagion, as in passing a nursing-bottle from one mouth to another.

THE CAUSES OF SORE MOUTH

My baby is troubled with a very sore mouth, which is exceedingly painful when she drinks. I have heard of bottle babies suffering thus for months, the ulcers often leaving scars for years. Is this the common fate of all poor babies who must nurse from a bottle, and is there no preventive or cure? It seems to be a rubber poison. I have read of silver and porcelain nipples, but have been unable to find any. Do you know where such articles can be purchased?

It is not the "common fate" of bottle babies. Some babies who are feeble get sore mouths, whether on the bottle or the breast. The commonest cause of sore mouths is neglect of the details of tidiness. The rubber nipples should be carefully scrubbed and cleaned, and such cleansing would be just as necessary if you had metal, porcelain, or even glass nipples. Besides, the child's mouth should be cleansed before nursing, and quite thoroughly after nursing if a tendency to sore mouth exists. Ordinary borax or boric-acid solutions are good, but others are used, according to the condition of the mouth, as directed by the physician. Metal and porcelain nipples are objectionable, especially the metal, even if they can be obtained. We have not seen one in a great while. The old ivory mouth-piece, too, has gone into deserved retirement. Rubber nipples of good quality, if properly cared for, will give you little trouble, we think.

SWOLLEN TONSILS

My little boy, who is just four years old, is troubled with swollen tonsils. During sleep he snores distressingly, and he has frequent colds in the head. Our physician thinks it would be best to cut the tonsils, but I dread the operation, and many friends, some of them experienced mothers, warn me against allowing the operation to be performed. They tell me that he may outgrow the trouble; that the operation, performed at this early age, might have to be repeated, and that, as he is the

picture of rosy health, the swollen tonsils and labored breathing at night cannot be doing him any injury. I am very much troubled about the matter, and am anxious to have your advice. Does this condition of the throat predispose to diphtheria? What home treatment would you suggest to diminish the swelling?

Of course, it is impossible for us to give a decided opinion as to this particular case; but, in a general way, something may be said. Even if the phrase "swollen tonsils" be limited in meaning to express only a condition of some duration, it does not always mean the same thing. In health the tonsil is very small—so small that some who have studied throat diseases particularly think that it does not exist in the sense of being a visible prominence. Now, when the tonsil becomes enlarged and remains so, it may be from removable causes and conditions, or it may not. Stripped of all technicality, the one group of cases may be considered as those in which much of the enlargement is due to an excess of blood in the tissues, and the other group embraces cases in which actual overgrowth of the tonsil has occurred. In the former cases the enlargement may diminish until the tonsil, while still larger than proper, gives no very great trouble. In the latter, the most experienced observers doubt if any treatment short of removal of the tonsil by some means is of much value. The popular ideas about outgrowing the condition are based partly upon the false assumption that what is really a considerably enlarged tonsil is the natural state of things, and partly upon the inability of non-professional observers to distinguish between the temporary swelling of the tonsils, the chronically engorged tonsils, and the really overgrown tonsils. Now, the opinion of the most "experienced mother" can be of no value here. She cannot, at the outside, have seen more than two or three cases of the last-mentioned variety. It is fair to presume that if you have a family physician you have chosen him because you believe him to be skilful and con-

scientious. That being the case, it is probable that such a man would not advise cutting off the tonsils if he believed he could accomplish a cure by any less severe method. If you are not content to rely on his judgment alone, get that of another physician, but do not ask or accept lay advice. So much for the "outgrowing" of the disease. As to the need of repeating the operation, only this need be said: The operator does not undertake to put the patient into better health than he had before the disease began. It is very common to find people who suppose that after an operation they can with impunity follow the same faulty course of life that originally caused the disease for which the operation was made. If the tonsils are removed the same care must be observed to prevent new trouble as would be requisite to cure the enlargement if it were of the kind curable without operation. As a matter of experience, however, it is true that if the tonsil is *thoroughly* removed at first a second operation is rarely, if ever, required. "Outgrowing" the disease is a bad name, since it conveys the idea that the simple lapse of time and increase of stature are sufficient for the purpose. This is only the case when improved health comes with the lapse of time. And in this disease this improvement is the result of very persistent watching as to all the details of hygiene, local and general, in the widest sense of the word.

This may sound strange as applied to one who is the "picture of rosy health," but we have so often heard this epithet applied to children who did not at all correspond to a physician's idea of health—indeed, have so often been asked to admire the very evidences of disease—that we are obliged to disregard such general statements.

While there is every reason to suppose that diphtheria is due to a special poison, it is also true (to quote from a well-known authority) that "any abnormal state of the mucous membrane . . . affords an excellent abode for diphtheria." The home treatment is suggested in what has already been said regarding hygiene.

ROUGHNESS OF THE VOICE

I have for some time been worried about my boy of six months. Ever since he was a few months old I have noticed that his voice is rough, sometimes very little, at other times, and especially after crying, so much so that he can hardly make a sound. My physician seemed to attach no importance to it, but it worries me to think that he might keep it, and I should like to ask what I might do for it, and if there is any danger of the voice remaining rough. The boy is otherwise perfectly well, never had any trouble, and is not yet teething.

The roughness of the voice is probably due to some relaxation of the vocal cords or some congestion of the mucous membrane. The latter explanation would more likely accord with the fact of the roughness coming after crying. As to the probable duration of this condition, we can give no opinion which would be more than a guess.

BED-WETTING

My little boy is nearly three years of age, and very healthy and strong, but he persists in wetting his bed nearly every night, despite punishment, restricted diet, etc. I know positively the trouble is not due to phimosis.

First of all, it should be remembered that the relative positions of a little child's bladder and urethra are different from what these will be later in its life, and that bed-wetting, even if very obstinate, usually is overcome ultimately, both by the real developmental changes and by the less sound sleep of later childhood. We think that bed-wetting in young children is never a subject for punishment. You say that you are sure that no phimosis exists. In connection with bed-wetting, this means that the foreskin cannot only be drawn back, but completely back, so that there are no adhesions or sources of irritation behind the ridge of the glands. But we accept your statement in full and leave this cause. In addition, you have tried restricted diet, which we

suppose includes restricted liquids of all sorts near bedtime. After the local irritation of phimosis and the mechanical distention of a bladder owing to liquids, one naturally thinks next of local irritations in the bowel from constipation or worms; next, of irritation of the bladder from urine too concentrated or containing irritating matters from a diet too rich in elements which go to make urates in the urine. Questions of too much or too little covering in bed have to be considered, and a variety of lesser causes, but those mentioned are the obvious and, we think, the more common ones. There is, however, always a considerable residue of cases which seem to be not dependent upon them, or at least not upon any one of them—cases, for instance, in which the sleep is so deep that many functions are performed unconsciously, others where there seems to be an unusual sensibility of the urinary organs. In the former group the best safeguard is the constant watching of the child and the taking it up at various times in the night before the bladder has had time to fill to the danger point. For the latter type some drugs have proved very useful. But inasmuch as they (for instance, belladonna, which is one of the best) are mainly drugs of serious potency, their use ought to be especially directed and carefully watched by a physician.

BED-WETTING IN A NERVOUS CHILD

My little boy of five still wets the bed every night. He is a very nervous child, and I do not want to resort to discipline in order to cure him of the habit. What is the cause of it, and what is the best treatment that you can suggest?

"Discipline," in the sense of punishment, would be entirely out of place for a trouble of this kind, and, in the case of a nervous child, would be distinctly harmful. The bladder trouble is sometimes very obstinate, taxing the ingenuity of both parent and physician; but, on the other hand, it sometimes promptly yields to treatment. We presume the child

does not waken, so as to give the mother a chance to place him on the vessel. The bladder is thus overfull—or fuller than it can tolerate—before he awakes. Such cases often occur, and often are cured by the systematic practice of waking the child at the hour of the parents' retiring, or later in the night, so that the bladder may be relieved. Of course, a nervous child should be wakened gently, so that it will not be frightened; but it should be sufficiently awakened to be conscious of the reason of its being taken up. Nervous children often manifest especial irritability of the bladder, and need systematic medicinal treatment. The management of this is too complicated an undertaking for domestic practice, and cannot be entered upon here. If the habit of taking up your little boy in the night, after limiting the amount of liquid taken before retiring, does not relieve him, ask the advice of the best physician within reach. The drugs needed are too potent for you to deal with without a physician's prescription and directions.

THE CAUSE AND CURE OF HICCOUGH

My baby, a little girl now seven and a half months old, has always been troubled with hiccough. For the first three months her food was what nature provided; then that proved insufficient, and the insufficiency was made good by cow's milk, upon which she has thrived. It is now her only food, and she is healthy, hearty, and happy, but is troubled very often with hiccoughs. She has them as often as four or five times some days, and perhaps next day will not have a single attack. She is now fed at intervals of four hours during the day, and gets one light meal at night.

I have sought information of my nurse and of persons who have had large experience with children, and have received the uniform, highly unsatisfactory reply: "Babies who have hiccoughs always thrive." Can you throw some light on the probable cause and suggest a remedy? I have used liquor of pepsin, sugar and sweetened water (both warm and cold). They give only temporary relief. I would like to strike at the root of the matter. I hope your reply may help other inexperienced mothers.

Hiccough is a spasmodic contraction of the diaphragm, which arises from a multitude of causes. While in some diseases it is a grave symptom, it is usually only a passing annoyance, and of this type is common hiccough of babies. The real physiological reasons of hiccough are not well understood, but the exciting causes are. For babies the commonest causes are simple overfulness of the stomach or pressure upward of the stomach or abdominal organs from any cause (tossing the baby or a sudden motion from alarm may excite it). What the particular cause in any given case is, only a close observer of that case can tell.

Some mothers have commented on the value of crying as a remedy. Recently in several medical journals the fact that sneezing is a cure has been discussed. The explanation of both seems to be this: Hiccough is a disturbance of the ordinary respiratory movements; so is sneezing and so is crying. If the one disturbance comes on, the other ceases. Every one must have noticed the similarity between hiccough and the violent sobs following a hard fit of crying with some children. It is not necessary that a person actually sneeze to produce the desired effect; tickling or gentle irritation of the nasal mucous membrane is usually enough to stop the hiccough.

This remedy, it has been pointed out by Dr. Gibson, is as old as Hippocrates, who says: "Sneezing occurring after hiccough removes the hiccough." Dr. Burnett, in a letter to the "Medical Record," says:

"When devoting a leisure hour to Plato's 'Dialogues,' as translated by Jowett, I was struck by a passage in the Symposium which had never arrested my attention before. Translated by Jowett, it stands thus: 'When Pausanias came to a pause, Aristodemus said that the turn of Aristophanes was next, but that either he had eaten too much, or from some other cause he had the hiccough, and was obliged to change with Eryximachus, the physician, who was reclining on the couch below him. "Eryximachus," said he, "you ought either to stop my hiccough or to speak in my turn until I am better." "I will do both," said Eryximachus.

"I will speak in your turn, and do you speak in mine; and while I am speaking, let me recommend you to hold your breath, and, if this fails, then to gargle with a little water; and if the hiccough still continues, tickle your nose with something and sneeze; and if you sneeze once or twice, even the most violent hiccough is sure to go. In the meantime I will take your turn, and you shall take mine." "I will do as you prescribe," said Aristophanes; "and now get on." '

"The hiccough was not cured by the first nor by the second remedy suggested by Eryximachus, but by the production of sneezing. The method of tickling the nostrils has been tested by us in cases of obstinate hiccough, and has been very successful. It is not necessary that the stimulus applied to the nose be followed by sneezing; the application of a gentle irritant to the nasal mucous membrane may be quite enough to put a stop to the hiccough, by diverting the nervous energy into other channels, although it may not be of sufficient power to induce sneezing."

EXCESSIVE NOSEBLEEDING

My baby, six months old, had a severe attack of "nosebleed." She woke from a sound sleep, and blood commenced flowing and continued for some ten minutes. Is such an occurrence a rare thing for an infant, or does it indicate some serious trouble? She was perfectly well before the attack, and seems so since. Can you suggest a way to stop the flow should it again occur? Our family doctor says he never knew of a similar case, and volunteers no opinion.

It is an unusual case. If it recurs, the safest and quickest remedy we can suggest is syringing the nose with quite cold or with hot water. A hot solution of alum is also quite efficient—a teaspoonful of powdered alum to a pint of hot water. If it should again occur, however, the nose should be examined thoroughly to see if any local cause—a small sore or anything of the kind—exists. This is sometimes the

case, and a little local treatment may save much bleeding, which is particularly desirable, as babies feel the loss of blood relatively more than adults.

GRITTING THE TEETH AS A SYMPTOM OF WORMS

My baby grits his teeth terribly when asleep at night. His grandmother and I have thought he had worms, and I have given him several enemas of strong salt and water, but I have seen nothing that looked to me like a worm. His seat has been broken out and has itched fearfully, and the enemas seem to have benefited both these troubles; at least, they have disappeared. Of late, baby's urine has looked rather greasy on the surface. He is apparently in perfect health, but has a very small appetite, and would starve before he would eat really proper food. Whether this be so or not, he seems to crave "grown-up" food and digests it perfectly. He is two years and eight months old, was nursed till sixteen months, and carefully fed till after two years. He has always been well and strong, but not very fat. Now he eats almost what we do, and is growing fat and rosy. The only trouble he has is this appearance (to me) of worms. Do you think we are right in our theory, and what do you recommend?

Gritting the teeth in sleep is not necessarily, or even usually, a sign of worms. It may proceed from any irritation, very often in the digestive tract. If a child shows the condition of urine you describe, we should look for digestive derangement; this, added to the eruption on the seat and the gritting aforesaid, make a strong probability that he is suffering, as might be expected of a child of his age who takes "grown-up" food. If he is put upon a proper diet, irrespective of his notions, he will presently yield the point and eat what he can get. It is, however, cruel to expect a child who has been indulged in this respect to sit at the same table with you without demanding your diet. He ought to be fed before your meals, and by himself.

We are often at a loss to guess what is the standard of

perfect health used by many persons. Your child is so described. Yet you mention small and capricious appetite, disordered urine, a skin-eruption and disturbed sleep as the sources of your anxiety about him.

THE SIGNS OF WORMS

My little girl, aged three years and five months, was taken sick recently with severe vomiting and was very ill for days. She had very high fever and coughed a long time after recovering otherwise. She seemed to have some intestinal catarrh. Though free from the diarrhœa now, she complains constantly at meal-time, and occasionally between-times, of "stomach-ache." She has very dark circles under her eyes and is very unusually irritable.

I am far from competent physicians, and therefore ask: Can I do anything special in the line of tonic treatment? Has she, perhaps, worms? In the beginning of her illness she passed one long worm.

To distinguish the ordinary intestinal catarrh from that which accompanies intestinal parasites, in default of the ocular demonstration of the worms, is practically impossible. Nor can one always say whether the worms are the cause of the catarrh, or the catarrhal condition renders the development of the parasite possible. This, too, even when the case is under observation, since the classical old-wives' signs of worms are really but symptoms of gastro-intestinal irritation. It is, therefore, impracticable to say anything definite about a case at a distance. But the previous existence of worms, as demonstrated, makes it rather probable that, similar symptoms continuing, others may be in the canal. It would be entirely proper to give a safe vermifuge —such as two grains of santonine night and morning for a couple of days, to be followed by a laxative. If you have no drugs at hand, you may find that common salt, a well-known vermifuge in Oriental countries, will be sufficient in doses of ten grains given three or four times a day. The

doses may be given, if preferred, by rather oversalting the food. It has the advantage in these doses of being a tonic to the digestion. We may add that cod-liver oil, by its tonic effect, tends indirectly to destroy worms.

THE CAUSE OF PIN-WORMS

Our baby is a year old, and has always been very well and strong. A few weeks ago, however, I found she was troubled with pin-worms. I used injections of aloes, and they soon disappeared, but after a few weeks returned, and under the same treatment she is free from them again. I would like to inquire the cause of these little pests, and if there is any way to get rid of them entirely. I had supposed worms were caused by improper food, but as baby had never taken anything besides breast milk, that idea was discarded.

The cause of pin-worms is always the introduction into the body of worms or their eggs. The worms may crawl from one child to another, while the eggs are obtained in various ways. They may cling to the finger-nails of another child who has the worms and who has been scratching its seat; they may be upon articles which the baby has access to, and so on indefinitely. Dogs often are sources of infection, especially if they are allowed to lick a child's face or mouth. We cannot, of course, tell the source of infection in the case of your baby.

TREATMENT FOR PIN-WORMS

Will you please tell me something of the symptoms of pin-worms, and remedies for this trouble? Is it very common, or is indigestion often wrongly called "worms"?

You are right; indigestion is often mistaken for "worms," and that convenient word is made to cover a wide extent of ignorance. Intestinal worms, however, are not uncommon, and sometimes really are the cause of various symptoms of

nervous or digestive disturbance. The worm which most commonly disturbs sleep is the *oxyuris vermicularis*, commonly called pin-worm, thread-worm, or seat-worm. By day these worms usually excite little disturbance, but at night, perhaps owing to the recumbency of the patient or the warmth of the bed, they create a severe itching and burning of the seat which may disturb or prevent sleep. In some excitable children marked nervous symptoms may ensue.

The treatment consists of great personal tidiness and laxatives to carry off the worms. The itching is allayed by the removal of the worms from the seat, and this is usually most readily done by injections of soap-suds or of salt and water. Olive-oil injections are useful also. Unaffected children should not be allowed to sleep with affected ones, as the parasites may be communicated.

PERSISTENT ITCHING OF THE NOSE

Our little girl of fourteen weeks is terribly troubled with an itching nose. Can you suggest the cause or remedy? She is a plump, strong, and rosy-cheeked baby, and has never had anything but breast milk until two weeks ago; at that time she was very constipated, with curd in the passages, and the physician advised giving her two meals per day of Mellin's food. She has five meals, three hours apart; she does not nurse at night; the food now seems well digested, and she has one good passage a day. She often wakes crying and trying to rub her nose on the blanket, and when lying on her side will turn over on her little face and rub it back and forth on the pillow. Her face has had scratches nearly all over, given by the little fingers, aimed for the nose. As soon as it begins to itch badly she wants to nurse and will suck her fist with great gusto. The doctor thought it some kind of abdominal irritation and gave her medicine which does no perceptible good. He thinks her too young for worms. She has had this trouble ever since she was old enough to make any attempt to rub her nose, perhaps five or six weeks ago. Do you think it can be worms, and is she too young to take worm medicine? She "drools" a great deal and bites my fingers very hard when

I wash her mouth, though there is no sign of teeth. I have tried every way I could think of to chafe her nose, using my hand, a coarse towel, her hair-brush, etc.

It would be well first of all to see if there is anything in the child's apparel that might cause the itching. Some fabrics, as, for instance, the "squirrel's-fur" yarn, have a light nap, which is easily detached, and excites, by being inhaled, great irritation of the nose. Still in this case, if we must hazard an opinion, the trouble is probably due, as the physician suggested, to some "abdominal irritation." The presence of worms is not probable, and we may say that the itching of the nose, which is so often pointed out as a symptom of worms, is due, we believe, not to the presence of the worms themselves, but to the co-existing intestinal disorders. As to treatment, we would suggest that the chafing of the nose be done as little as possible, but that soothing applications be used. Very weak solutions of carbolic acid have been found useful; so, too, have solutions of bicarbonate of soda, and many other things which your physician can suggest. Above all, persist in your attempts to discover the digestive disorder which probably lies behind the irritation described.

WHAT TO DO FOR AN ATTACK OF FALSE CROUP

I should like to ask what to do for my baby when she wakes up at night with a cough like the bark of the croup. What do you consider to be the best and quickest remedy until the doctor can be summoned in the morning?

Where only the bark is present, often, and indeed usually, nothing is necessary to dislodge the mucus from the throat beyond the waking and the child's natural cry. If this is not sufficient, the drinking of a glass of milk (or even water), as hot as can be swallowed comfortably, or the placing of a sponge wrung out of hot water—as hot as can be borne by

the child—upon the throat, will usually relieve it. It is, however, well to have in the house an emetic, and that which combines tolerable rapidity with the requisite safety is the syrup or wine of ipecac. If there is difficulty of breathing, from half a teaspoonful to a teaspoonful may be given, and repeated in twenty minutes if relief is not gained. If vomiting is not required, doses of from two to five drops may be given hourly or less frequently, according to the severity of the cough.

You should bear in mind that if nausea is produced, either with or without vomiting, it is likely to be manifested by paleness, clammy skin, and some perspiration, just as in adults. If this was not remembered, undue anxiety might be felt previous to the vomiting.

THE TREATMENT OF BUMPS

My little boy, two and a half years old, recently fell and arose with a big lump on his forehead. In my absence a neighbor pressed the swelling down with the blade of a kitchen knife, which achieved its object by reducing the lump, but left the spot quite tender and discolored. I know that this way of treating a bump is common in certain parts of the country, but supposed it had been generally superseded by more enlightened methods. Is there ever any danger in this procedure, and what do you recommend in similar cases?

The method has no real harmfulness. The bump doubtless was caused simply by an effusion of blood from very small blood-vessels which had been broken, together with some effusion of the watery part of the blood (serum) into the loose connective tissue. Pressure will cause absorption of the latter, but the discoloration from the effused blood will usually remain, just as after any bruise. The tenderness also is the rule. Treatment is simple. There is no special virtue in the table-knife (or a variety of other things used for the same purpose), except that it is convenient for pressure and is cold. Witness the ancient remedy of the door-key, when this was a

large implement of iron, applied to the back of the neck to arrest nosebleed.

A rather "more enlightened method" is to apply to the bump or bruise, by means of a sponge or cloth, water as hot as can be borne, gently pressing it. It does all that the cold pressure can do, and is more effective in relieving the present and preventing the subsequent tenderness.

DROWSINESS FOLLOWING A BUMP ON THE HEAD

What should I do when a child falls on the back of his head? Should I let him sleep or keep him awake? My little boy fell from his high chair a short time ago, hitting the back of his head with such force as to cause him to vomit. I was advised to let him go to sleep and send for a doctor, which I did; but baby woke up after an hour's sleep quite bright. My physician says I should have kept him awake, but I think I did right.

What harm can it do to a child to sleep right after having had such a fall?

We also think you did right. We do not know of any condition due to an *injury* where keeping the child awake can do any good, whereas sleep is often a restorative, as in the case of your child. If a child has taken a narcotic poison, such as a preparation of opium for a typical instance, the tendency to sleep much should be combated until the effects of the drug are past. In such a case as you are describing, however, the condition is one of very mild concussion of the brain. Vomiting generally announces the beginning of reaction. The notion that children who have had a fall and have bumped the head severely should not be allowed to sleep is very common in popular medicine, but we do not remember to have met it in medical circles. It probably arose from a confusion of the stupor of compression of the brain, or of the symptoms of the meningitis which sometimes follows severe injuries to the head, with the restorative sleep.

FAINTING

What is to be done if a child suddenly faints?

The child will probably fall flat if left alone. If the fainting is recognized before this, the child should be at once laid flat without a pillow. See that the neck is free and that no clothing binds the waist or chest in a way to hinder respiration. If signs of recovery are not prompt, the limbs and lower part of the body may be raised, to cause the blood to flow toward the head. Smelling-salts or common ammonia may be held to the nostrils. Breathing usually starts pretty promptly, after which the patient may generally be left undisturbed. The head may be continued in the low situation until the patient desires to change its posture.

CRACKED LIPS AND CHAPPED SKIN

Please give a remedy for cracked lips and chapped skin.

We suppose that the effects of cold are meant. The remedies are, first of all, avoidance of the exposure which caused the condition. The skin and lips should be as free from moisture as possible, and after the necessary washings the parts should be carefully dried. Cracked lips, especially cracks at the corners of the mouth, remain so by the constant use of the parts, talking and laughing often mechanically injuring the points already inflamed, as well as exciting a flow of saliva which irritates. Many applications are in common use, such as cold-cream, camphor ice, etc., but we do not know that they are really better than simple vaseline. Their chief value is to protect the cracked or chapped surfaces from the air.

II

DEFECTS AND BLEMISHES

FRECKLES

In the case of my children freckles attack both sexes with equal impartiality, not sparing even my little girl baby of fourteen months. If still possible, I should like to save her from the fate of her brothers and sisters. Is there a remedy? Of course, I know it would be wrong to try to remove freckles by anything that might injure the skin; but is there nothing harmless that could be used to advantage? Is it advisable to avoid exposure to the sun? Will broad-rimmed hats be of any use in keeping the fiend off?

Freckles are annoying, and are often apparently very disturbing to those who set much store by their complexion. These peculiar pigment deposits are usually confined to the parts of the person which are exposed to the light—the face and hands, namely—and are therefore not easily concealed. Although it is true that they sometimes appear upon the clothed parts of the body, yet there is very good reason to believe that exposure to light is their essential cause. They appear in summer, when the hours of light are long and outdoor life is most indulged in. Furthermore, freckles are peculiar to certain complexions. Brunettes rarely, if ever, freckle; they become tanned. Blondes of the florid type—those with red or reddish hair—are much more susceptible to freckles than others. With the passing of summer the freckles fade or disappear, and in winter they are scarcely noticeable; as adult life is reached they are less evident and

abundant, independently of the care then bestowed upon the complexion.

The causes being thus a peculiarity of complexion and exposure to light, it is impossible to do much for them without doing harm to the general health. Some local applications will temporarily make the freckles paler, but the only real treatment is prevention by exclusion of light. This, of course, will be presently destructive of the health of the child. It is possible to lessen the freckling, however, by avoiding exposure to the strongest glare of the sun, and the shade-hats are of some value in this direction.

A MARK ON BABY'S FACE

Our baby is now more than three months old. Two or three weeks after her birth a red mark appeared on her nose. We thought at first that she had scratched herself pretty vigorously, but on consulting a physician a few weeks later he pronounced it a "mother's mark," and advised the use of electricity for its removal; this has been applied three times, and the redness has gone from the middle of the mark. Would you advise us to continue the use of the electricity, or could we do better? We dread to have it used, for it frightens the little one very much, and must be painful. Is it likely that the mark would disappear of itself after a while?

I have heard of saliva being used with success to remove marks, and also that the juice of the milkweed plant is good. Is it probable that either of these would accomplish a cure?

There are "mothers' marks" of various kinds and of many degrees of severity. Some of the very faintest ones we have seen fade partly or wholly without treatment, but as a rule they do not. As a mark upon the face of a woman is a matter of great concern to her, every endeavor should be made to get rid of one, if it be of any importance, before the age of self-consciousness.

The saliva is valueless for the real "mothers' marks," and

so, too, is the milkweed-juice. Whatever value the latter has is in cases of the most superficial kind. In this case the continued use of the electricity seems to be advisable.

THE REMOVAL OF A BIRTH-MARK

I wish to consult you about my little five-weeks-old babe, who has been unfortunate enough to be birth-marked on the face. Both eyelids have reddish veins over them, the left much worse than the right. Half of the lid looks red, and there is a spot of a darker hue on the right nostril. When the child is passive the spots are dim, but when active they become brighter. They are not yet blood-red, though I fear they will become so. As the complexion clears they become more prominent. I would like to ask:

If there is any probability of their dying out without treatment?

If electrical treatment is used will it endanger the sight? What kind of electricity is needed—galvanism? or would a faradic battery do?

At what age would it be best to commence?

There is little probability of their spontaneous disappearance.

Not if properly applied. The form of electricity used in such cases is what is called electrolysis, a needle connected with the battery being thrust into the part to be destroyed. It may leave a scar. Neither galvanism nor faradism as ordinarily applied is of value.

As soon as the proper surgical attention can be secured.

WARTS

Will you tell what one may do to remove warts? My boy, five years old, has nine on one hand. I overheard his brother telling him he did not love him so well since he had those dreadful things on his hand. What does cause them, and what will prevent their coming?

Warts consist chiefly of an overgrowth of the papillæ of the skin. The exciting causes of this overgrowth are various, and often no cause is recognized. They are more likely to occur in childhood, probably because all the phenomena of growth are then more active than at other times. They seem to be most common where the skin is most exposed to all kinds of irritation, as upon the hands. Sometimes they appear to be communicated from one person to another, and some persons show a great susceptibility to them.

Warts usually appear suddenly, and often as suddenly disappear. Doubtless upon this peculiarity depends the apparent success of the charms and incantations so commonly employed for their removal. It is possible that in some instances, where the charm involved the rubbing upon the warts of the juice of certain leaves, the latter may have really had a medicinal influence.

The most prompt and efficient method of disposing of warts is to thoroughly scrape them out. This leaves a little "punched-out" looking hole in the skin, which heals quickly if kept clean. If any bleeding occurs it can be stopped by hot water. This extirpation, if thorough, generally prevents a return.

If this seems too radical a performance for domestic medicine, the glacial acetic acid or a saturated solution of salicylic acid may be applied carefully to the wart. The stick of a match or a piece of cigar-lighter is a convenient implement for making the application. The liquid should be applied freely to the wart, but not allowed to flow around. The surrounding skin may be protected by vaseline or bicarbonate of soda before the application. After a day or two rub off the dead part and make a new application, and repeat until the wart is gone.

THE BEGINNING AND TREATMENT OF STAMMERING

My little boy of five has, since his recovery from a severe case of scarlet fever, shown signs of stammering. He is sometimes

unable to express himself at all, especially when beginning a sentence, he repeats certain words, although he may afterward speak quite well for hours. How does one know whether this is a real case of stuttering? Is it necessary to begin treating him? If so, what is the nature of the treatment?

It is not unusual to meet with cases of stammering at this age. The beginnings may often be slight, and scarcely noticeable either to the child or to the parents. It is always necessary to take strenuous measures to prevent a further development of the evil. Usually, the child will not outgrow the trouble. On the contrary, it is likely to grow with the child's growth, and what originally may have been but carelessness is apt to become a permanent defect. The treatment of so young a child calls for gentleness and calmness, for nothing is so likely to promote stammering as fear and excitement on the part of the child. When a mother perceives that her child has the habit of repeating syllables or letters, or of incorrectly pronouncing words or syllables, she must not let this pass by unnoticed, but she must quietly and distinctly, and without startling the child by too sudden interruption, utter the wrongly pronounced word or syllable, and cause the little one to repeat it in like manner. If the mother has failed to understand the child, let her cause it slowly to repeat its words—always, however, without startling it by too sudden or violent commands—and let her make it a rule never to comply with the wish of a child which it has not clearly and distinctly uttered. So young a child cannot, of course, be systematically treated, but he can be made to speak slowly. The most important thing is to accustom him to take breath before he begins to speak. A good plan is to tell the child short, simple stories, pausing in the recital, and letting him repeat part after part slowly and distinctly. Gymnastic exercises are, a little later on, of great value. If the trouble is persistent, systematic treatment on the part of trained and conscientious instructors will be called for.

LISPING

I am somewhat troubled by the persistence with which my boy of six lisps. He pronounces the letter *s* invariably as *th*, and my efforts to correct him are fruitless. Is he too young for systematic exercise in speaking, and what course would you recommend?

By lisping we understand the false pronunciation of certain lingual sounds, particularly *z* (in *zone*), *s* (in *sin*), and *c* (in *cider*). This defective pronunciation is in most cases the result of habit, often, however, of affectation, and is then just as ridiculous as the pronunciation of *r* by those persons who incorrectly produce it by vibration of the uvula; or it arises from an abnormal formation of the tongue (too long or too short, too broad or too thick). In the former case it is merely necessary for the person to resume a natural manner of speech; in the latter the person must, by exercises of the tongue and practice of the lingual sounds, be brought to approach a correct pronunciation.

Th is a frequently occurring sound in the English language; when, however, it is applied where it does not belong it is wrong, and is called lisping. But not the false placing of the tip of the tongue alone is the cause of lisping; it is also due to too weak a pressure of the tip of the tongue on the palate or teeth, and, indeed, a careless holding of the tip of the tongue altogether. The same holds good of all lingual letters. Those afflicted with this defect must, therefore, place the tip of the tongue exactly on the place just described, and this with decision. Those who are troubled with the defect of lisping must draw in the tongue, and the tip, which is bent back, should be somewhat raised. It is better, in exercising, to raise the tip of the tongue too much at the outset than too little; the stiffness thereby occasioned will disappear with the continuance of exercise. As an exercise let the mother take the word *zone* and pronounce it to the child in the following manner: First, pronounce the *z* alone

with a sounding expiration; keep up this buzzing tone for a time and then add on the *one*. Let the child exercise in this way all the words beginning with *z*. Having become accustomed to pronouncing the *z* without thrusting the tongue forward and out, he will learn to pronounce all the dental letters correctly.

We do not think the child too young to begin this systematic exercise, due care being observed not to fatigue or irritate him.

WANT OF SYMMETRY IN THE FORMATION OF THE HEAD

My little daughter, nearly eight weeks old, was born easily, after what the competent doctor called a quick, normal labor. Neither he nor the nurse noticed anything out of the way. But since I have had entire charge, I notice that the right side of the forehead is slightly more prominent than the left, and bulges more in the region of the temple than is the case on the left side. The back bulges also on the left.

Can you not help me to know whether the condition is serious, although she gives no sign of being unlike any healthy baby?

The points to be determined are: Is the distortion more than the want of symmetry which is within normal limits, and is it increasing or diminishing? You would have saved time by asking the physician who attended you in labor if he noticed any change. The commonest cause of distortion of the head is rickets, and we have seen the oblique form depending, as we believed, upon this peculiarity, but it is not often developed so early. Only a physician who has seen the child can give an opinion worth having.

UMBILICAL GROWTH

I have a little nephew fifteen months old who has a navel rupture admitted to have been caused at the time of his birth. A small portion of what appears like proud flesh protrudes slightly, and occasionally bleeds a little. It constantly exudes

a watery matter, and must be kept covered with soft linen, which becomes thoroughly stained each day. The child seems to suffer no inconvenience from the rupture, running and jumping with unusual strength for his age. We are not positive that there is tenderness under pressure. He is, however, troublesome to dress and care for, and there is also a fear that the evil may increase, or that some time a hemorrhage may ensue. A local physician has ordered applications of lunar caustic. Burnt alum and sugar, and other astringent remedies, have also been applied, with no effect. What is your advice as to treatment?

The ailment is probably not a rupture, but the description corresponds to a kind of fungous growth sometimes observed at the navel. If astringents fail, as they seem to have done in this case, the application of the actual cautery (hot iron), which is not very painful, although appalling to the imagination, generally effects a cure. The treatment should be carried out by a competent surgeon, who could give an anesthetic if desirable.

ROUND SHOULDERS

My little girl, four years of age, is forty inches tall and weighs thirty-three pounds—a gain of three and a half inches and four pounds for the last year. She has always been tall and slender, and from the time she began to walk we noticed a tendency to round shoulders—a tendency which has slowly developed until it is now quite marked. Her father's family, with the exception of her father himself and one brother, are all very markedly round-shouldered, one case of it in the family amounting to deformity. I have tried long and patiently, speaking to the child and reminding her to hold herself straight, but she never remembers more than two seconds at a time, and my efforts result in flat failure. I wish to know if I should put braces on her this fall, and, if not, should I do so at a later time?

She has always been delicate until the last six or eight months. Though not what one could call a very robust child, she seems

perfectly well, has a fair appetite for plain, wholesome food, and an excellent digestion, is regular in her habits, and sleeps soundly and well from ten to eleven and one half hours out of the twenty-four.

First, make sure that near-sight has nothing to do with the tendency to stoop, although in so young a child it is not so likely to be the cause as in one who has begun to use books. Speaking to a child rarely, if ever, does any good in this complaint. The stoop is not the result of desire or of indolence; it is usually due to some feebleness of the muscles of the back, which may indeed be hereditary, as you seem to suppose it to be in this case. The cure is general strengthening of the child and gymnastic exercise of the muscles of the back and shoulders, which she can get at a calisthenic class. If there is any spinal trouble, a support suitable to the particular case should be prepared or selected by the surgeon who has charge of the case. The use of braces depends upon the degree of stoop in the shoulders; if it is great, or if the exercises do not diminish it, the braces are worth trying. For directions as to the kind needed, you should consult one of the best surgeons in your city.

FEAR OF BOW-LEGS

Our baby is a bouncing big one, weighing about twenty-eight pounds at a year old. The subject of bow-legs is a serious one with us, and consequently we do not allow him to follow his inclination to walk. Some say that lime-water will prevent it, and the ounce of prevention is what we want. What do you advise?

You do not say why bow-legs are anticipated by you. The commonest cause of bow-legs is rickets—a disease which is characterized, in its full expression, by deformities of the bone, due to deficiency of phosphate of lime in the bones, as well as overgrowth of their organic parts. The lime-water has been used very much as a remedy for rickets, and so in-

directly to prevent bow-legs. It is not a preventive of bow-legs, except when rickets exists. But rickets being a disease of nutrition, it is best met and prevented by careful watching in this direction, and if any evidences of the early stages of the malady exist they should be attended to promptly and the disease arrested. A child should be allowed, as a rule, to follow its own impulse about getting upon its feet. It should not be placed on its feet except, perhaps, when struggling to get there of itself. But when a child is able to get up alone it is very difficult to hinder it, and there is rarely any reason for doing so.

REMEDIES FOR BOW-LEGS

How can bow-legs of babies be straightened?

Bow-legs of a mild degree of severity in infants or very young children sometimes straighten in the process of growth. Unfortunately, only an experienced physician can predict, with any certainty, which these are. We should mention that in real babies, as distinct from running children, a curve of the leg which is not abnormal is often taken by over-anxious parents for bow-legs. When bow-legs really exist to any degree, the cure is effected by braces, but in babies who are young the limbs can be straightened sometimes by frequent handling by the mother, her hands pressing the limb toward the desired shape. Even if braces are necessary, at the same time or later, the manipulation is helpful.

A CONFIRMED HABIT OF STUMBLING

Is there any remedy but "moral suasion" for a confirmed habit of stumbling on the part of an active boy between five and six years old? There is no evidence of weakness in his legs or ankles, yet it is a very usual thing for him to fall at the slightest obstacle, like a projecting paving-stone or any other unevenness in the street, or even in the house, like a door-sill. Severe bruises and bumps appear to convey no lesson, and as

it seems to be only a habit of extreme carelessness we appeal to you to suggest the best punishment. The matter was rendered very serious to-day by a fall, while running, in which our boy struck his forehead on a sharp stone, making two or three mutilations which will probably leave permanent scars, to say nothing of the present pain, which will keep him housed for nursing for some days. We tremble to think of what the consequence would have been had the stone struck his eye instead.

Differences in natural agility are very great. Further, clumsiness is often increased by certain illnesses. For instance, some diseases, like scarlatina and diphtheria, which have often paralytic sequels, sometimes are followed by a certain clumsiness of gait, which depends upon no recognizable paralytic condition. We can recall children whose gait after such diseases was strong and enduring, but whose feet fell like hammers. Again, some ailments cause a diminution of that harmony of movement called coördination; this is one of the results of phimosis. The harmfulness of phimosis has been much exaggerated; nevertheless, in every case of excessive clumsiness in a boy this possible cause should be inquired into. In any case, we should not think of punishment to cure stumbling. If judicious coaxing and "slowing down" will not break the habit, punishment will not, but will rather render the child more self-conscious, and therefore more clumsy.

It may be added that near-sight or some other defect of vision is often the cause of stumbling.

A TONGUE-TIED BABY

What shall be done for a baby that is tongue-tied? Shall the string be cut?

"Tongue-tied" means that the natural bridle under the tongue is so much shorter than usual as to inconvenience the child in some way. It is rarely as much of a hindrance

to speech as is supposed, because if the child's tongue is free enough for it to suck well, it is free enough for speaking. Occasionally, though rarely, a child is born with so short a tongue bridle as to prevent nursing, and in such cases cutting of the bridle is demanded. In other cases it is not really called for, although sometimes done in obedience to a popular belief. The cutting is a trivial matter, if done by a competent person.

CLEFT PALATE AND HARELIP

Can the trouble called "cleft palate" or "harelip" be easily cured? Are its symptoms unmistakable?

Cleft palate and harelip are not the same trouble, but allied ones. Both are due to a defect of development, the parts from which the face is made up not being completely fused. Harelip is more frequent than cleft palate. It may occur in one or both sides, the splits in the lip being below the nostrils, never in the middle. The cleft palate may involve the soft palate, or the hard palate as well. Harelip can generally be cured by an operation of no great difficulty, although involving some nicety to obtain the most satisfactory results. The operation for cleft palate is more difficult, but usually quite successful. It can be cured only by operation.

There are no symptoms in the ordinary sense of that word. There is a very evident physical defect. If the defect be so great as to interfere with nursing, nutrition is difficult, and in one sense the symptoms of the resulting inanition might be attributed to the causative defect.

"WHOPPER-JAW"

My baby is now over ten months old. She has cut the upper and lower central incisors, and is now getting the lateral incisors. The under teeth shut over the upper ones. Is there any danger of her being "whopper-jawed" when she has all

her teeth? If so, can anything be done to prevent it? Her mouth when closed appears perfect, though the teeth are as I have described.

The projection of the under jaw, rather than of the teeth themselves, usually causes the condition of "whopper-jaw," and it is doubtful whether it can be artificially modified. If the condition continues and appears dependent upon the teeth, your dentist can tell you if their position can be rectified.

DEAF-MUTISM

What would you think of a child nearly three years old who did not say a single word? I do not mean one who has a language of his own, unintelligible to others, the simple fact being that he does not attempt to utter a word, and it is very hard to see that he comprehends when spoken to. I have in mind a little fellow who is causing us much anxiety on account of his backwardness about talking, or rather of his not speaking. What would you advise?

Such a child should be first of all examined for deaf-mutism, and, if it hears well, some one familiar with such matters should inquire into its intelligence. In order to ascertain whether the child hears, the aurist relies upon the tuning-fork, whistle, and bell, or instruments producing noises of a similar character. In applying any of these tests it is necessary to be on one's guard, and exclude the possibility of the child having its attention called to the various testing-objects by senses other than that of hearing. For instance, the mother may test with a whistle; the child turns at once, and she reasons that it has heard the sound. This, however, may not have been the case; the blast of air leaving the whistle may have impinged upon the child's face, and this may have caused it to turn around. In like manner, a child may turn because it feels the vibrations transmitted by the floor, following the violent closure of a door; yet this action

on the part of the child may be wrongfully attributed to its having heard the noise.

An important peculiarity of deaf-mutes, though not in itself an absolute proof, is their manner of expressing their desires through gestures, and their impatience and anger when not understood at once. One of the most important signs, of course, is the fact that the child does not begin to talk when it should. No mother should accept the verdict of deaf-mutism until such an opinion has been given by a competent aurist, after he has examined the child's ears. A child may, as a result of being born so, or as the consequence of disease of the ear after birth, whether this has been noticed or not, be very hard of hearing, and yet not be absolutely deaf. If nothing be done for such a child, its deafness becomes worse from disuse of the organ of hearing, and finally may become absolute, while if proper training and treatment had been instituted in such a case, some amelioration of the defect might have been achieved.

III

COLDS AND CATARRH

FRESH AIR AND COLDS

I would like to know if a child six months old that has not been out of the house for many weeks ought, in your opinion, to be taken out during the winter on moderately pleasant days. The child is not very large or strong for her age, and is raised on the bottle; she discharges from the nose as if she had a cold most of the time.

The facts given are too few to enable us to answer definitely, but from the following general remarks you may be able to make an application to your baby's case: In the first place, we do not believe in taking out children in all kinds of weather regardless of consequences, which is a part of the senseless "hardening" theory. The safe rule is, we think, this: Children ought to be regularly sent out, except when there is rain or when, by reason of great cold and very high wind, they cannot be kept comfortable. On such days we believe in the value of a promenade, the child dressed as for an out-door walk, in a room which has been thoroughly opened to the air. In this way it can get something of a change without exposure. But there are some children who do not seem to do well if allowed to go out of doors on any but the "bright and airless" days. This is particularly noticeable in the city when the streets are loaded with mud and slush, and we think evil effects are more noticeable in children who are old enough to walk than in

infants. This may be attributed to the inactivity of the children who walk slowly along on the sidewalks or are obliged to stand at street corners while a conversation is carried on by those in charge. The children whose animal spirits lead them into continuous romping out of doors suffer less. Be the cause what it may, some children, as we have said, do not well endure their daily walk, and are in less frequent need of medical advice when kept in on all but very fine days. Going out seems to keep them supplied with "colds" and other little ailments. But before the attempt to take the child out is given up one should make sure that the attendant inconveniences are unavoidable. If there were not so frequent an assumption to the contrary, it would be unnecessary to say that there is no deleterious element in out-door air that is not in in-door air; our in-door supply must come from without, and we certainly do not purify it in our dwellings. What we do avoid indoors is a too low temperature and the violent force of winds and, to some extent, the all-pervading dust.

If possible, let the child be carried. Your six-months' baby probably could be; this gives her the warmth of the arms of the person carrying her. But see to it that she is well protected *everywhere*, not only about the head and trunk, but about the legs. Many a little child we meet whose legs protrude helplessly from its finery. If the child is in long clothes, let them be not too fine to be doubled up or folded around the legs. They are for warmth, not for decorative art. If it has reached the age of short clothes, and is to be carried, we prefer to knitted leggings, with the shoes protruding, a petticoat of short flannel or a blanket, sewed up at the bottom like the sleeping-bag of camp-life. This keeps the feet warm, while allowing the legs freedom of motion.

A word as to the "cold." This term is so fixed in our speech that it is useless to quarrel with it. It is only necessary to mention here that the symptoms are not always, and perhaps not usually, due to the chilling of the person. And

when the trouble is persistent, as in the present case, this is almost certainly not the cause. There may be a local cause in the nose, or the trouble may depend upon the feebleness of constitution of which you speak. Perhaps this feebleness is to some extent kept up by the child's lack of fresh air. At all events the cause of the discharge ought to be inquired into.

COMPREHENSIVE QUESTIONS CONCERNING COUGHS AND COLDS

Please give me some simple home remedies for tight cough, loose cough, head cold, with running at nose, cold on the lungs, hoarse cold—always understanding that if sufficient relief is not obtained a physician will be consulted.

The various ailments you ask remedies for are usually simply different stages or manifestations of the same thing—namely, a catarrhal inflammation of the mucous membrane of the air-passages. A "cold" may go through the whole range, or it may be confined to or chiefly manifested in some particular parts of the passages. A typical bronchitis, for instance, begins with a "nose cold," or coryza. The irritation quickly attacks the larynx, causing a "hoarse cold," laryngitis, which may be attended in some children with the symptoms of false croup. It then passes into the windpipe (trachea) and the larger bronchi, making a bronchitis. In the first congestion, the cough is "tight," and there is a sense of constriction; later, as the mucous membrane begins to secrete freely, and the discharge increases, it is said to be "loose." To the physician, the whole procession of events is one malady, and he would probably attack it as such, if he had the opportunity, in the beginning. Usually, however, the catarrh is well established before he is called (if at all), and he must then simply give remedies to ease this or that symptom, and to try to abbreviate the course of the "cold," which, let alone, would usually, from beginning to end, cover about a fortnight. It should be noted (although we cannot here discuss it) that "colds" are not, by any

means, the same thing in all cases. The "prevailing colds" are probably due to some special poison, affecting many people at once in a way similar to that in which the now very familiar disease "influenza" or "la grippe" attacks a community. There are, however, some real "colds," due to effects of change of temperature. Thus, some persons cannot sit in a draft without experiencing subsequent pain and stiffness in the exposed parts. Persons whose naso-pharyngeal mucous membrane is not in sound condition are always catching cold—*i. e.*, having slight exacerbations of their ordinary catarrhal condition, which they may be so accustomed to as not to recognize it in its true light.

For the relief of symptoms, then, changing the order of your questions, the head cold may be treated with local applications, such as steam of hot water, when the sneezing and other signs of irritation first appear, and sprays of some safe antiseptic, such as "listerine," diluted with five to ten times its bulk of water, after the discharge is established. Internally, a great many remedies have had repute. One much used is the so-called "rhinitis pill" (rhinitis meaning inflammation of the nose), which contains quinine, camphor, and belladonna in small amounts.

The hoarse cold is chiefly important from the possibility of an attack of croup. So far as domestic treatment is concerned, the remedies before mentioned are about as good as any, noting that steam is especially useful, as being more easily applicable. Sometimes comfort is obtained by the use of soothing mixtures, known to physicians as "demulcents," such as flaxseed tea, or elm-bark tea, and the like, and, what is particularly acceptable to the childish palate, the mixture of butter and molasses cooked into a viscid mass, popularly called "stewed Quaker."

The "cold on the lungs" probably is intended to mean bronchitis, as described above. The fault of domestic diagnosis is that it has no means of distinguishing from ordinary bronchitis pneumonia or pleurisy, which have cough,—the latter often a peculiarly "tight" and painful one. Leaving

this aside, we may say that the domestic remedies suitable to the "tight" stage are simply those which allay irritation and favor the flow of the bronchial secretion. For the former, opium in small doses is very useful, hence the repute of paregoric and Dover's powder. In the former the opium is combined with camphor, in the latter with ipecac. Of medicines promoting bronchial secretions, or expectorants, ipecac and squills are familiar examples, the former being preferable for nursery use. When a cough is loose—*i. e.*, when the secretion is already sufficiently free—it is doubtful if any drugs proper for domestic administration are desirable, beyond the simplest soothing mixtures, the "demulcents" spoken of before. Tonics and remedies conducive to hastening convalescence are useful, but not within the proper range of household medicine.

TREATMENT OF A "HARD COLD"

What is the proper management of a hard cold in the case of an eighteen-months-old child? It has made him exceedingly nervous, and his naps are much disturbed by coughing. The cold is in his head, but I keep throat and chest well oiled, and have given no medicine.

The medicinal treatment of a "hard cold" we cannot give you, because the phrase has no definite meaning, and if there be any need of medicinal treatment at all, it is not domestic treatment alone. In your child's case, in this particular instance, the "hard cold" seems to mean a bronchitis, with the usual acute nasal catarrh, sufficiently severe to disturb his sleep by obstruction to his breathing. The cough, probably bronchial, increases the disturbance. The nursing of such a case consists in keeping the child warm enough, but not burdened with clothing, in moderately warm but not stuffy air, in giving light diet, and keeping the bowels free. The oiling of the chest is harmless; we cannot say that it is definitely curative, unless the oil contains some slightly irritating substance, such as camphor or a little turpentine.

CAUSES AND TREATMENT OF CATARRH

I have four little girls who are, respectively, seven, five, three, and one year old. With each approach of winter and more or less all through they are troubled with catarrh, earache, and croupous cough. We have a comfortable new home, deep water, natural gas in the kitchen, and wood fire in the nursery. We live in the country, within three minutes' walk of the church or school. This catarrhal tendency is inherited from the mother. Which would you advise—to try a local remedy? If so, what? Or to move to a warmer climate? If so, where?

It would appear that your surroundings are satisfactory and not responsible for the catarrhal tendency. Such a tendency undoubtedly is caused by or aggravated by heredity, but very much also depends upon exciting causes. Let us take up the conditions, as you put them: Catarrh—that is, nasal or throat catarrh; earache, doubtless dependent upon extension of the catarrhal inflammation from the throat through the Eustachian tube to the middle ear; croupy cough, dependent upon a catarrhal laryngitis, also usually an extension from the pharynx. So the whole comes back to the nose or throat catarrh. Now, the commonest cause of this trouble in its chronic or recurring form is an enlargement of the glandular body in the posterior nasal cavity, known as the "third tonsil" or as an "adenoid." Catarrhal conditions exist with any such enlargement, but if the latter be present, success in treatment of the catarrh will hardly be gained without the removal of this mass. Such removal is the first and most efficient local remedy. We cannot tell you how to find out the exact causes of the trouble for yourself. A physician familiar with the proper state of the nasal cavities can tell by the use of his finger whether any such obstruction exists. Its removal should be effected by him if he be familiar with the operation.

If no enlargement exists, or after it has been removed, a good deal can be done by local applications. Any good cleansing spray will do good, but we do not lay stress upon

that until the prime question of the growth in the nasal cavities is settled. As you have evidently considered the need of removal of your home, you doubtless would be still more ready to make a journey for treatment—if you cannot find what you need at home—to a city where good medical advice can be obtained.

One or two things else may be mentioned. Where the catarrh depends upon inherited weakness, as you think it does in the case of your children, usually a good deal is gained by the persistent use of cod-liver oil through the cool months. Again, a good many of the existing causes of catarrhal attacks may be prevented by strict attention to dress and general hygiene.

THE COMMUNICABILITY OF CATARRH

Will you kindly inform me if there is any danger in a person caring for an infant who has catarrh of the head?

We suppose you mean, Is there danger to the attendant? and that by catarrh you mean an ordinary chronic catarrhal discharge from the nose. We particularize because the popular use of the word catarrh covers a variety of disorders, from an ordinary fresh "cold in the head" to special diseases of the nasal cavities. But taking the question to mean what we have above supposed, we should say that there was no danger to the attendant. If you mean, Is there danger to the infant if the attendant has nasal catarrh? we should say that it would depend upon the kind of "catarrh." These acute colds in the head seem to be communicable. Ordinary chronic nasal catarrhs seem not to be, while there are occasional cases of quite another kind which should be guarded against.

CARE OF A SENSITIVE THROAT

My baby of two years has, I fear, a delicacy of the throat. Her voice will become quite hoarse after a few minutes' exposure to damp air, and without any other sign of a "cold." She has

now been very hoarse for a week. Occasionally, in taking her up in the morning, I can detect a slight odor of mucus.

I have given no medicines. She rarely has a "cold." So far I have only been careful in protecting her feet from damp ground, and in keeping on her a light-weight woolen shirt. Is there anything further that I can do, and do you think she will outgrow the tendency?

I ought to mention that last winter she had bronchial pneumonia, her only illness, but as she apparently recovered without any weakness, and this hoarseness dates back to last summer, I have not considered the illness responsible for her present condition.

It is difficult to really treat the throat of a child of two years, but something may be done. Apparently the child has a nasal catarrh, the mucous membrane being easily affected by damp air. For the present we think it wise to try to teach her to let you cleanse the nose and throat with a spray. The reasons for this are that cleansing the mucous membrane tends to improve its condition, and, above all, prevents various organisms from making their home there and then setting up the more serious throat diseases.

TAKING COLD EASILY

My baby, nearly two years old, takes cold very easily, I never know how. She perspires on slight cause. When asleep, with only a little covering, her head will very soon be wet. Her feet, too, perspire easily; in fact, her stockings are almost always damp and her feet often cold. Of course I know she needs some constitutional remedy for this, and I do use something when she is not taking other medicine for a cold, but is there anything I can do locally?

The two symptoms mentioned, sweating of the head and taking cold easily, are suggestive of that form of malnutrition known as rachitis, or rickets. If this exists, the remedy lies in nutritious and digestible food, cool sponging of the

skin, and whatever else goes to make up sound hygiene. Sometimes tonics are needed. But the preventing of the colds by proper hygiene is far better than dosing for them.

COLD IN THE HEAD; APPLICATION OF VASELINE

My baby is almost nine months old and weighs about twenty pounds, exclusive of clothing. She seems strong and active, but has had two or three troublesome head colds and is inclined to constipation. She has two teeth, which were cut without any trouble, is fed entirely from the breast, and usually takes six meals during the twenty-four hours.

Our house is quite "drafty," so that baby is kept a good deal in her high chair and carriage. Ought she to exercise on the floor?

Is there anything to do for a cold in the head except to apply vaseline about the nose and forehead?

It is not necessary for her to be on the floor, but she should have opportunity to use her limbs. The high chair is confining; the carriage is better. Why not let her play upon a bed with sides to keep her from falling off, which would be still better?

Various solutions can be used in the form of spray from an atomizer. But you would better not select the solution without medical advice. The vaseline should be used in the nose, rather than around it. Warm it, and if you have no suitable atomizer, put it into the nostril with a soft camel's-hair brush or by dropping in a little.

"STARVING A COLD"

You would oblige me if you would state whether a young child having a cold should be kept on a very plain diet while the cold lasts. Do you believe in what is commonly called "starving a cold"? My little five-year-old niece has been coughing for some time and looks pale, yet she is generally contented and happy. Would it be best to give her gruel, milk and

water, etc., and but very little meat, while the cold lasts? Should she be kept very quiet and sleep as much as possible?

The proverb from which our correspondent quotes is quite as often reversed; indeed, we first learned it, "*stuff* a cold and starve a fever." The question, as specifically put, is also too vague to be answered categorically, since so many ailments go under the name of "a cold." But we may answer in a general way thus: This child has been coughing for some time, and has probably a catarrh of the throat or windpipe. She is somewhat depressed by it, as shown by her paleness. As far, then, as the diet needs supervision, it should be for the purpose of securing good nutrition with easy digestion. The milk, if good, answers both indications. The gruels, if milk-gruels, are also useful. If she can easily digest a little meat in the early part of the day, it may be allowed, but it will not be needed if plenty of milk be taken. Good, nutritious broths, not greasy, are also good; so sometimes are fresh eggs. It will be noticed that while the food in question is "light" in the sense of liquid, it is exceedingly nutritious, and that it gives no indorsement at all of any starvation theory. Great confusion exists popularly as to what is nutritious diet. Much food that would be very nutritious to a robust adult digestion is only wasted and irritating when put into a stomach that cannot manage it.

IV

WHOOPING-COUGH

THE FIRST SYMPTOMS OF WHOOPING-COUGH

Can you tell me what are the first symptoms of whooping-cough? Do they differ in any way from those of an ordinary cold and cough?

The first stage of whooping-cough presents symptoms of a catarrh of the upper air-passages and bronchitis which has nothing to distinguish it from an ordinary inflammation of these parts. There is sneezing, with some suffusion of the eyes and running at the nose, but less than is seen with measles. The cough is accompanied by very little, if any, expectoration. After these symptoms have lasted from one to two weeks, it is noticed that the cough becomes severer and assumes a spasmodic character. The cough is worse at night, and whenever the child becomes excited from any cause. It takes place entirely in paroxysms, between which the child is perfectly well. A paroxysm begins with a tickling sensation or a feeling of constriction in the throat. It consists of a series of expirations which expel much of the air in the lungs, followed by a quick inspiration that produces the sound known as the "whoop." When children begin to vomit in connection with fits of coughing, we can be suspicious of whooping-cough, even if the "whoop" has not occurred.

SUPPOSED IGNORANCE OF PHYSICIANS CONCERNING WHOOPING-COUGH

Two of my children, one two years old and the other five, have had whooping-cough rather mildly for the last two months, but I think they are on the mend. What would improve their case?

I regret to say that the medical faculty do not seem to know much more about it than was known fifty years ago.

Whooping-cough is a disease, if not of fixed, at least of prolonged, course. The "medical faculty" know a great deal more about it than they did fifty years ago. But medical science usually does not, and we suspect will not, abbreviate the course of diseases of an infectious nature after they are well begun. What has been accomplished in many of them is this: To recognize their natural career, the accidents and dangerous complications attending them; to point out the best means of avoiding or treating the latter, and of mitigating symptoms and hastening convalescence. Most of all, science has pointed out means of avoiding contagion.

Now, as to the particular cases in hand. The children are mending, and in all probability will soon be cured. But we can offer you a few hints which may be serviceable. First of all, winter is coming, and in your climate will come soon. It is very desirable not to enter the cold season with the bronchitis of whooping-cough still lingering, because of its tendency to exacerbations and to chest complications. See to it, therefore, that your little ones are properly clothed from throat to foot, evenly, warmly, but not burdensomely. Try to keep your indoor temperature moderate (not above 70 degrees, preferably nearer 65), and as uniform as possible. Regulate their outdoor clothing each day by the thermometer, which will probably vary a good deal in the coming months. Try to teach the habit of breathing through the nostrils, as mouth-breathing is likely to excite cough in

children recovering from whooping-cough. Many little details will occur to you for which we have not space.

Secondly, attend to the diet and to the digestion, as any derangement of the stomach aggravates the tendency to cough and to recurrences. If there is any marked digestive trouble, medicinal remedies will be needed—tonics, stomachics, etc., according to the nature of the derangement.

Beyond these points we need not specify, except that abundant and pure air in or out of doors is always a tonic. By pure air we do not mean harsh air, nor gales of wind, which may bring anything but purity with them.

CONTAGION OF WHOOPING-COUGH

Can whooping-cough be carried from one child to another without the two children being together? At what time in the duration of whooping-cough does one child give it to another?

The poison, or contagium, of whooping-cough is generally supposed to be very volatile—*i. e.*, easily spread about in the air. It therefore is very easily contagious if a sufferer be brought near others who are not protected, while for the same reason the poison is thought not to cling to apparel, and hence to be not portable, at least for any considerable distance. The disease is communicable from a person as long as the cough continues.

SEVERITY OF WHOOPING-COUGH IN RELATION TO AGE

Does whooping-cough generally "go harder" with infants, say seven or eight months old, than with children somewhat older, other things being equal?

We cannot answer the question in the precise form in which it is put—that is, to say whether the severity of the disease is greater at seven or eight months than at a somewhat later

period, because we do not know how much older children you have in mind. This, however, we can say: The mortality from whooping-cough—doubtless chiefly from pulmonary complications—is much greater in young children than in those of what is called "the school age." In fact, the mortality is chiefly under three, indeed even under two years of age. The actual per-centum loss, however, in children of ordinary strength and well cared for is not very great, although among the poor and neglected classes the disease and its sequels account for an enormous total mortality. In the mild season the danger of pulmonary complications is less, and hence the danger from the disease is less.

V

DIFFICULTIES OF WALKING AND DISORDERS OF THE LIMBS

THE POSSIBLE DANGERS FROM EARLY WALKING

Can it hurt a child to begin to walk too early? My little daughter is not quite eleven months old, and shows a very decided desire to get on her feet. Should she be discouraged? I have been told that she might get weak ankles or some other trouble if allowed to walk too soon.

In a general way, it may be said that if a child were urged to walk before the joint tissues were strong enough certain deformities might ensue, the injuries usually attributed to early walking being bow-legs, knock-knee, and weak ankles. The phrase "weak ankles" generally means an ankle that is not firm in its support of the body by reason of relaxations of the ligaments, particularly those on the sides of the joint. Occasionally we see a "weak ankle" which is such by reason of a general flabbiness of tissues, the muscles of the leg which move the foot sharing in this weakness. There is a kind of knock-knee also due to relaxed ligaments, but it is not very common in children, being usually acquired later, as a result of injury, or of some peculiar occupation. Still, it is well to be on one's guard in the case of a child that appears to be prematurely desirous of getting on her feet. She certainly ought not to be encouraged in any way.

POSSIBLY OVERBURDENED LIMBS

My little boy, twenty months old, seems to be a little weak around the ankles, and when he is walking the lower part of the limb appears as if it were bowed. He is very healthy and well in every way, and weighs something over thirty pounds. The legs are not bowed, but can be pressed together very easily; for some little while back I have been in the habit of pressing them together when dressing him for bed in the evening, and it appears to have done some good. He has not been sick one day since being born. Will you kindly give me some advice as to what is the best thing to do under the circumstances?

It is not clear that anything is really the matter. The child is twenty months old, and his weight, if it be nude weight, is that of a three-year-old child. The limbs probably are a little overburdened at present. The best thing, we believe, will be to gently manipulate them to stimulate the growth of the muscles, and to try to discourage unnecessary standing.

TURNING-IN OF THE TOES

What can be done for a twenty-months' baby who shows a decided tendency to walking with toes turned in? She has not inherited the tendency, and I have tried to be careful to have her shoes large enough, though she grows so rapidly that her toe generally finds the end before the new ones are bought.

Examine carefully (best when baby is naked) to see if the turning-in is at the ankle—or, more exactly, at the joint between the instep and ankle—or whether the whole limb rolls in from the hip. If the trouble is in the foot, perhaps some support is necessary, but that will depend upon the degree of the twist. If the trouble is at the hip it may be only the natural tendency to walk with the toes forward rather than outward. Rubbing and kneading of the flesh about the hip that makes the prominences of the buttocks may develop

the muscles there and thus give greater power to turn out the toes. Such cases have a multitude of varieties and degrees, and the need of artificial support cannot be definitely determined from a short description.

In walking the natural tendency to turn the feet in is particularly marked in children. It is often observed that some children turn in the toes of one or both feet very much when walking, although no real club-foot or distinct disease exists. This peculiarity is often—indeed, usually—cured before adult life by the child itself when old enough to give its attention to it. If it is very marked it probably requires the action of some light, properly constructed apparatus to overcome it. This can be directed only by some surgeon familiar with this kind of cases, and he can best advise you whether the condition is really of sufficient importance to need treatment at all. By yourself you can do little more than to call the child's attention to the turning-in of the toes when she is old enough to understand you, and so prompt her to an effort at cure.

DISINCLINATION TO PUT THE FOOT DOWN

Our little girl, eight months old, wants to stand all the time on her toes, and it is hard to get her to put her foot flat down. Can we do anything to remedy this, or will she outgrow it?

It is rather early for the child to be making serious attempts at walking, and until she does the question cannot really be answered. You may find out something in this way: When she is sitting or lying, take the limbs (one at a time) in your hands; straighten the knee completely, so that the thigh and leg are in a straight line; hold the limb thus, and press the toes and front of the foot upward, and see if there is any difficulty in bringing the sole to a right angle (or rather beyond) with the line of the leg. Do this several times to each limb, until you feel quite sure what is the condition. If you cannot easily bring the foot to or beyond the right

angle, ask your physician to examine it. This is the best advice we can offer, as it may be only a trick of the child, or it may be due to some unusual rigidity of the calf muscles. There are a number of ailments in which this drawing up of the heel exists.

WEAK LIMBS

My baby, thirteen months old, has crept for some time, but does not try to stand at all yet or pull himself up, and does not seem to care to rest on his feet. As he is quite fleshy, is it best to let him partly rest his weight on his feet, and in this way teach him to walk? Some of my friends think it would be best; but as his ankles and limbs seem weak yet, I am so afraid of injuring them. Will you please give your opinion?

Do not hurry him at all. If he does not walk for six (or indeed twelve) months yet, it is better than putting a heavy baby on his legs prematurely. A baby that creeps well is not without ambition, and will get up as soon as it is safe. If his limbs are distinctly weak you may rub them and bathe them with salt and water, but do not urge him to walk at present.

THE SIGNIFICANCE OF A LIMP

If a child of four suddenly begins to limp, without any apparent cause, and continues to do so for some time, is it a sign of hip trouble?

Not necessarily. Limps come from many causes associated with the lower limbs or the spine, especially its lower part. The persistent limps of children nearly all belong to two groups—those which are due to loss of muscular power, such as follows any kind of paralysis, and those which are due to the endeavor, often unconscious, to spare an inflamed or sensitive joint. To the latter group belongs the limp of hip disease in its early stages. If a child with any tender joint

or bone of the lower extremity be watched it will be observed that that particular joint shares less than it should in the motions of the limb or not at all. If it be the hip which is at fault, that joint will be noticed to be more or less rigid in walking or if the member be moved. Ordinarily the lower part of the spine endeavors to move more than is usual to make good the loss of mobility at the hip. If a child is noticed for any reason persistently or frequently to spare a joint, it is advisable to seek medical opinion.

POTT'S DISEASE

What are the first symptoms of Pott's disease? What is its cause and cure?

Ordinarily the first thing that the family notices is the prominence of the affected vertebra. But there can usually be noticed, sometimes earlier, a rigidity of the spine, an unwillingness to bend it, and unconscious endeavors to relieve it from bearing weight, as by lying down or, in standing, to hold on to chairs or furniture or to support the shoulders and chest by the hands upon the knees, so that the weight is carried upon the arms, knees, and legs, rather than upon the spine. Besides, there is often a grunting respiration if the chest vertebræ are affected, colicky pains if the lower ones are the seat of disease. These are the commonest early symptoms likely to be noticed by a mother or an attendant.

The disease is a tubercular inflammation of the bone. Its cause, therefore, is essentially the infection of the part by the tubercular bacillus. Some have thought that slight injuries have proved the exciting cause, and it may be so, but it is not clear whether in the cases in which an injury has occurred the latter irritates an already existing tubercular deposit, or whether the disturbances caused by a slight injury become subsequently infected. The main factor in any case is the tubercle.

The cure is a very long and tedious one. The main fea-

tures of the treatment are two: The employment of all the hygienic and medicinal remedies which are effective against tubercular infection anywhere, and the support of the spine by proper apparatus, to limit irritation and prevent deformity as far as possible.

KNOCK-KNEE

What is knock-knee? How can one clearly recognize that a baby who is just beginning to walk has it?

It is such a change in the bones or the joint structures as allows the knees to come unduly close to each other, or even to interfere with each other, while usually the ankles and feet are correspondingly separated more than usual.

WEAK ANKLES

What can be done to strengthen weak ankles in a child of three years?

The weak ankles may be a part of a general flabbiness of make-up, either congenital or the result of illness, or they may be due to a lax condition of the ligaments of the ankles. In either case, but especially in the former, everything (including good hygiene, careful feeding, showering, massage, and rubbing of the parts) which tends to strengthen the ankles is proper. Besides, in case the weakness is so great as to hinder the proper taking of exercise, ankle supports of leather, arranged to go inside the shoes and sold in the shops, may be used. This is about the limit of domestic resource, but the physician has some more at his command.

VI

CONSTIPATION

CONSTIPATION IN BOTH MOTHER AND CHILD; LAXATIVE DIET; THE ACTION OF SENNA

I have always been more or less constipated, and fear that my baby, whom I am nursing, has inherited this tendency. Is this generally the case? She is otherwise well in every respect. Her sister of two and a half is also troubled by constipation. What would be a laxative diet for her?

It seems to be generally believed that constipation in a nursing mother is the cause of the same trouble in the child, but it would be difficult to prove or disprove this assertion. It certainly happens not infrequently that both mother and child are constipated, and, if the child is nursing, one is tempted to consider this coincidence as cause and effect; but the same thing happens frequently in the case of children who have never been nursed by their mothers. If we assume in such cases a hereditary influence, it must be one that antedates the birth. The fact is that the causes of chronic constipation are not always easily recognized nor always readily amenable to treatment. As we have said once before, any physician who keeps accurate accounts of the peculiarities of the families he treats can tell of individual peculiarities which seem independent of ordinary conditions. For instance, one parent is habitually constipated, the other never has a hint of it. One child is "as regular as clockwork," while the other scarcely ever has an evacuation without some

remedy or assistance. Yet the hygiene of this particular family may be as uniform as possible. At the table they all eat the same meals, except that the constipated ones may eat less of the constipating food than the others. The cause must lie in some difference of the nervous and muscular action of the bowels.

If milk is still the principal part of the child's diet, it will be advisable to add a tablespoonful, or even more if the milk is rather thin, of cream to each glass of milk the child drinks. The porridges of oatmeal so commonly used help, by their bulky refuse, to relieve constipation, and their effect is increased by the addition of cream to the milk. Bread made of whole wheat (Graham or other unbolted flour) is preferable to white bread. As regards fruit, peaches are excellent. A little later, good pears and apples may be given; they should, however, always be scraped with a spoon. In winter, one may give the juice and pulp of the orange, which is about the only useful uncooked fruit obtainable, but various cooked fruits may be given. Of vegetables, spinach, cauliflower, asparagus, and celery are admissible. They must be fresh, thoroughly cooked, finely cut, and the spinach should be made into a good *purée*, not served as "greens" in country style.

MAGNESIA AS A LAXATIVE

Is there any harm that can possibly be done by giving a child magnesia? I was advised to use it in the cream food in place of the lime-water, on account of its laxative effect. Baby, eight months old, is badly troubled with constipation. I put about half a teaspoonful into each of the five or six feedings per day.

Magnesia is probably not so harmful as was formerly supposed. It is soluble and laxative only in combination with some acid, which acid may be met in the alimentary canal. The older physicians always gave warning of the danger of masses forming in the bowels. This may have occurred, but

must have been very rare, as magnesia has been given very freely as a domestic remedy. On the other hand, it is not a desirable remedy. If a laxative antacid be desired, bicarbonate of soda has all the advantages of magnesia, without its alleged disadvantages.

CONSTIPATION IN A "BOTTLE BABY"

Will you please tell me what I can do to relieve my baby of constipation? He is four months old and has always been troubled with it. For a long time I was obliged to use a soap suppository or water injection very frequently. My physician at last prescribed something, but I find I must give it very frequently to keep the passages normal.

I have been obliged to use a bottle for him almost from the first. I have used cow's milk entirely for him. Do you think it may be harmful to continue the use of suppositories and injections?

To answer offhand is more than we can do. Constipation is an extremely common ailment in infants, particularly if bottle-fed. How much you have diluted the cow's milk and with what we do not know. Possibly the constipation would yield in part to the freer use of sugar and cream with the milk. So, too, usually the use of oatmeal gruel, not too finely strained, for dilution of the milk is often somewhat laxative.

As to medication, we prefer for habitual use the introduction of a suppository or an enema to the administration of a laxative. The soap pencil, the pencil of molasses candy, and, most efficient of all, the glycerin suppository are very useful. Very often the most persistent care is necessary to keep the bowels relieved until the child is old enough to eat and digest a mixed dietary. We have followed a good many children who were troubled with constipation in infancy, and found them entirely and satisfactorily regular by two and a half to three years of age.

CASTILE SOAP SUPPOSITORIES; CANDY SUPPOSITORIES

Don't you think suppositories of Castile soap are preferable to those of bar-soap? The old-fashioned molasses suppositories work more kindly with my children than anything else for constipation.

The Castile soap has the advantage over other soaps of being usually a well-made and bland soap and less irritating, and it is so far preferable. There are children, however, whose bowels seem to need the stimulus of the coarser variety. The candy suppository has "the wisdom of our fathers" in its favor.

OBJECTIONS TO SUPPOSITORIES; THE EFFECT OF MASSAGE; THE VALUE OF REGULAR HABITS

In my experiences with two very constipated children I found that the use of soap and a roll of paper induced piles—quite as great an evil as constipation.

My method, which entirely cured my babies of constipation, was to rub and knead the bowels with oil thoroughly every night and morning, and to put them on the stool at a regular time each day. With this treatment I adopted a laxative diet for myself, and when they were weaned gave them as much laxative food as possible.

I am persuaded that the use of soap, stick-candy, or paper, which produces an irritation of the rectum, is not always wise.

Your experience of course justifies your abandoning the suppositories; but, judging from considerable personal experience and the reports of many others, the soap rarely has such an effect. There are some persons (adults) so sensitive as to complain of being irritated by so unirritating a thing as a well-oiled syringe nozzle, but this is rare. One source of irritation in the use of suppositories is the pressing too firmly in introducing them. If the point is introduced into the seat, and a very little time is allowed to elapse before pressing further, the first spasm of the muscle re-

laxes, and the pencil is readily introduced. The soap is often made less irritating by scraping it and forming a suppository of the scrapings. This is introduced easily and is not hard. We have never known real piles (as distinguished from an irritation of the anus) produced by the use of any of the suppositories recommended, but we accept your diagnosis.

The regulation of the mother's diet is important. The friction and kneading of the bowels have some value, but in the regularity of putting the child upon the stool you have touched the most important point of all. Of course, it is inapplicable to very young infants, but in adult life, as well as in childhood, the rigid following of this rule often cures constipation without any medicinal treatment at all. There is excellent physiological reason for it, which we cannot go into here.

THE EFFECT OF AN ENEMA

Will you kindly tell me if the habit of giving babies, for constipation, enemas of warm water twice a day is an injurious one, or if it is apt to lead to serious inactivity of the bowels?

The question might be restated thus: Is an enema twice a day more or less harmful than allowing the bowels to remain unmoved or than some other remedy? It hardly need be said that any remedy, whether medicine, suppository, or enema, is objectionable if an evacuation can be obtained by such natural stimulants as laxative food or exercise; but if something must be given, then what? The objection to the enema is the possible dilatation of the lower bowel, and a greater tolerance of retained matter. The choice is generally between an enema and a suppository. Once a day is less objectionable than twice.

VII

VARIOUS DIGESTIVE DISTURBANCES

A PROBABLE CASE OF "DYSPEPSIA"

Could you quiet my great anxiety by telling me whether a child who only recently began speaking through her nose will of herself lose that trouble? She has been sick with derangement of the stomach, and is always very constipated; but since three weeks ago she is up again, though her tongue continues coated. Ever since she has been sick she speaks dreadfully through her nose, and often picks at it, too. When I make her repeat her words loudly it sounds less nasal, but we should feel greatly troubled were she always to speak so. She has since her illness grown very thin, and every moment attempts to clear her throat in a way which is painful to listen to. The doctor said it is a nervous freak; she once before had it, last spring, but lost it later, so I am not quite so much worried about it as I then was. She seems weak, and toward evening always appears tired out. She is four and a half years old, and has for almost two years not taken afternoon naps. I have of late tried to have her again sleep afternoons, but without avail; she only lies down and rests that way. Mornings, when she first wakes up, she complains of pains in her head, and similarly when she goes to bed. Invariably after she falls asleep, and is asleep half an hour or so, she cries out as if scared; but we can soon quiet her. Is that habit, or is there some distinct cause for it?

This child is evidently still ill, although less so than she has been. She has still, as enumerated, a catarrh of the nasal

passages and throat, foul tongue, debility—most marked toward evening—morning headache, and broken sleep. A child in that condition needs systematic care by a physician, and should not be treated by the parent alone. By this we do not mean that the physician must see her often, but he should prescribe for her, either seeing her or being informed of her condition at fixed intervals (to be fixed by him) until she is better. If we were to guess at the child's ailment, we should say that she had what is usually called "dyspepsia" —that is, a disordered condition (catarrh) of the stomach and upper intestine. Proper treatment will cure it, and make her sound again. The nasal symptoms will improve with the rest; but if anything remains of them, local treatment of the catarrh will be very helpful. Sprays of listerine, or some other disinfectant which your physician may recommend, will probably be of decided benefit.

HABITUALLY COATED TONGUE

Can you suggest a remedy for an habitually coated tongue? My little boy is three years of age, has a fair appetite, and lives mostly upon milk, with the addition of some fruit and vegetables, a little meat, and simple puddings. I have consulted a physician concerning his diet, who advised not giving any meat while the tongue remained coated, also no sweets. I tried this, but it did not seem to make any great difference. He is an unusually active child, sleeps well at night, and also takes a nap through the day. He weighs thirty-six pounds and measures thirty-seven inches in height.

Your physician's advice was in accordance with the ordinary understanding of such cases, and is probably correct. There are instances of tongues habitually slightly coated or whitish which do not appear to have any concomitant disturbances of moment; but these are exceptional. Ordinarily the coated tongue is supposed to be associated with a deranged state of the digestive organs, especially the stomach. And the restrictions of diet suggested by your physician are usually

demanded to insure a cure, even if other measures need to be taken.

EXCESSIVE PERSPIRATION OF THE HEAD AND OTHER SIGNS OF RICKETS

My baby boy perspires a great deal. Often, especially after the noonday sleep, his pillow is quite wet. I think that this excessive perspiration causes his hair to come out, as he does not seem to have as much now—at the age of six months—as he had some time ago. His head is quite large. He is pretty strong and heavy for his age, and there seems to be no trouble with his digestion, although his stomach is large and generally quite hard.

There is a popular belief that excessive perspiration of the head causes loss of hair, but we doubt whether the two are really cause and effect; their relation, we suspect, is that they are both effects of a common cause. Several disorders of nutrition may cause a large abdomen or a large head, but when both are present, with the peculiar symptom of sweating of the head, it is extremely probable that the trouble is rickets—a condition in which the system does not appropriate sufficient phosphate of lime. It is an ailment that is quite common, but also very commonly overlooked, unless it goes very far. It is, fortunately, quite easily controlled by proper diet and treatment, but is not within the scope of domestic medicine. A competent physician ought, by all means, to prescribe a suitable diet for your child.

THE USES OF BICARBONATE AND PHOSPHATE OF SODA FOR WEAK DIGESTION

Will you kindly enlighten me on the following points? My baby boy, fourteen months old, has always been small and delicate. He was weaned two months ago, and on account of his extremely weak digestion I was obliged to add an alkali to his milk, which I dilute with one third strained oatmeal. On account of his habitual constipation I use carbonate of

soda instead of lime-water. I received the suggestion from a good authority, but I am aware that both lime-water and soda were recommended "temporarily to counteract acidity." Now I am becoming anxious about continuing to add the soda, though I still fear to omit it.

Please inform me whether its continued use may be injurious to my little one, and enlighten me as to what bad effects it would produce.

Is phosphate of soda an alkali?

The persistent use of any drug should be avoided, unless there is evident reason for its administration. As to the bicarbonate, we should say that it is, perhaps, as little harmful as any. But its use is chiefly as an antacid, rather than a laxative. It is put into milk only to make sure that the latter is not sour, and to prevent too sudden curdling. It is safer to have blue litmus-paper in the house, with which to test the acidity of the milk, and to add the soda or not, as required. Blue litmus-paper is reddened by any liquid having an acid reaction. The druggist who sells you the paper will explain its use to you. The sudden curdling is perhaps better prevented by the addition to the milk of barley or oatmeal-water, which act, as is supposed, by mechanical hindrance to the formation of large curds. Soda has a medicinal value also if the stomach secretion is believed to be *too* acid (it is acid naturally), which is evidenced by hard or large curds or uncommon acidity in the vomited matters, or similar curds in the passages. All alkalies, if abused, are supposed to have the effect popularly called "thinning the blood," but the soda salts are generally better tolerated than those of potash.

Phosphate of soda has a slightly alkaline reaction, but it is not counted as an alkali. It is a useful laxative or purgative, according to dose.

"LIVER TROUBLES"

I wish to solicit your opinion regarding inherited liver troubles. Can they be outgrown? And will any particular diet aid the

cause? Milk in any form known to me will induce an attack in both my babies.

We answer your question rather doubtfully, because we are not sure that we know what is meant by "inherited liver troubles." "Liver troubles," "liver complaint," and the like are popular phrases, probably inherited from the medical speech of previous generations, which now have no definite meaning. We think that they are generally used to express a catarrh of the stomach or upper intestine. But from what you add we suspect that you mean an inability to digest milk without difficulty.

The development of the digestive powers is such as gives ground for hoping that, as this power strengthens, the ability to digest milk will be increased. But we may add that a real inability to digest milk if properly taken is very rare indeed. There is a very general disability to digest milk if it is considered as a drink, and not as a food. We mean that people take or allow their children to take milk with other food as they would water, disregarding the fact that it is itself a very highly nutritious food. We often see children at table who, having already eaten enough, pour into their stomachs a glass or two of milk, alone enough for a good meal, and often cold enough to arrest all digestion. The result is very usually such a catarrhal attack as is called "bilious." One of the ways in which the inability to digest milk is "outgrown" is by learning this simple rule: Take it for food, not for drink; take it slightly warm as you would any other food, and do not make young children (*i. e.*, under a year and a half) try to eat undiluted cow's milk.

DOMESTIC TREATMENT OF SUMMER COMPLAINT

Can you publish some remedy for the domestic treatment of summer complaint? I am going North with my youngest child, a baby of eleven months, who is inclined to bowel troubles, and am anxious to be provided with the proper remedies for an emergency.

Against an emergency it is well to have in the house some chalk mixture, or, better yet, the compound chalk powder, as the mixture is apt to spoil in hot weather; also a very small vial of the compound tincture of catechu and another of paregoric. A mixture can then be made as needed, thus: Take a level teaspoonful of the chalk powder and mix with six of water; rub or stir thoroughly together, until no lumps exist, then add a teaspoonful of the catechu tincture and mix thoroughly. The dose of this mixture for a child of one year will be a teaspoonful, and to each dose five drops of paregoric may be added. The paregoric is not mixed with the other ingredients, as it is frequently desirable to stop the paregoric while the medicine is continued. Little children sometimes show marked susceptibility to opium poisoning; hence the effect of each dose is to be noted, and if drowsiness appears the paregoric should be omitted; otherwise, the dose can be given every two hours if the purging continues. It ought to be stated that these drugs are not to take the place of other measures which the physician will indicate. The suggestions are intended only for use in case a physician is not readily at hand.

APPARENT OVERFEEDING

My little girl, four weeks old, seems to be troubled with indigestion. She spits up so much after nursing that it seems scarcely possible that her stomach has retained any of the milk. Then almost immediately she is hungry again. I nurse her quite regularly every two and a half hours, and seem to have plenty for her. Sometimes the milk is curdled when she raises it, but more frequently not.

She is troubled and restless after nursing, and often cries out when spitting up. She weighed seven and three quarter pounds when born, and now weighs ten and one half pounds. Her bowels move three or four times in twenty-four hours; the color is good, but there are curds in the movements, and she almost always cries before the bowels are moved. Those I have consulted say, "spitting up makes a fat

baby," and "it is healthy," but it does not seem to me to be right. Can you advise what is best to do?

The symptoms are very suggestive of over-distention of the stomach. A child at four weeks can rarely take comfortably more than two fluid ounces (four tablespoonfuls), and if your flow of milk is large, and particularly if it contain a good deal of solid matter—butter, casein, etc.—the regurgitation would very likely follow. If the trouble still continues, see that she gets smaller meals. The repeated demands for food are the results of the indigestion, not of normal hunger.

INDIGESTION; DILUTION OF MILK CALLED FOR

My baby boy is just six months old, has one tooth, and another visible. I nursed him partly until five months; since then he gets pure cow's milk, sterilized, lime-water in every bottle, each bottle holding six ounces. His meals he gets regularly, three hours apart. He has always, with the exception of the last few weeks, been well, his digestion having been perfect until lately, but now he has stool sometimes five and six times in twenty-four hours, and he has no appetite whatever; his sleep also has been restless since teething began.

Ought I to put cream in his milk; what can I do for his appetite; must I change his food, and if so, what shall it be?

A child of six months usually cannot safely take pure (*i. e.*, undiluted) cow's milk. The average baby of twelve months finds it more than he can digest. You ought certainly not to add cream, unless to a much diluted milk. We favor "cream foods," but they are not made by adding cream to milk alone. One of the best has this composition: Milk, four tablespoonfuls; cream, six tablespoonfuls; water, twenty tablespoonfuls; milk-sugar, a tablespoonful slightly heaped. After sterilizing, add two tablespoonfuls of lime-water. This, as you see, makes a pint of food. But you can probably do better than that now by simply diluting the milk

with an equal bulk of boiled water, the lime-water to be included in this amount of water. Probably his appetite will improve when his dietary is more suitable.

PAREGORIC FOR GREEN MOVEMENTS

Is the use of paregoric harmful if given for green movements, in doses of five drops in half a teaspoonful of water every two or three hours? How much may be given in that way?

It may not be harmful, but it does not attack the cause of the green stools, it only diminishes their frequency. The green stools usually are over-acid, and the green color is believed to be due to a microbe which flourishes in them. The purification—or disinfection—of the intestinal canal is essential to success. The drugs best suited to this you would not be able to select wisely, and you should rely upon your physician for them.

THE CAUSES OF DIRT-EATING

My baby boy, who is now twenty-six months old, has for months had the habit of eating dirt, when playing out of doors. Is there something lacking in his food? I have always been very careful about what he eats. Until he was fifteen months old I gave him only sterilized milk. Since then he has had bread and milk, bread and butter, rice, and soft-boiled egg. Last summer I gave him a little fruit. Can you tell me why he persists in the habit I have mentioned?

The morbid appetite is not rare, but usually is found in connection with disordered digestion or a disordered nervous system, and, in adults at least, in connection with the hysterical peculiarity. Examine in these directions for a cause.

VIII

ERUPTIONS

THE CHARACTERISTICS OF MILD AND OF SERIOUS ERUPTIONS

Is there any way of telling the difference between a little harmless rash—heat-rash, so called, for example—and that of scarlet fever, measles, etc.? If it was the beginning of a severe case, of course the other symptoms would make themselves known; but how would it be in a light case, and with an infant, who could not tell its feeling?

I have a little nephew, about three months old, who, when his mother was just about to bathe him one morning, exhibited a slight rash. She was rather in a dilemma, not knowing whether it amounted to anything or not, and whether she should give the baby his usual bath and send him out for his airing in the carriage, or call in her physician. She finally decided that it did not amount to anything, and her judgment in this case proved correct; but what if she had been wrong and the result serious?

The differences are not easy to describe in words, and it is said that in hot weather even physicians have mistaken German measles and some other eruptive disorders for prickly heat. The most striking distinction to the untrained eye between scarlatina and prickly heat we think is the elevation of the eruption of prickly heat above the skin. It is composed of minute conical elevations with or without a watery liquid in a vesicle at the top, and the inequality can be recognized by passing the fingers over the surface. The

eruption of scarlatina is made of minute bright red points, afterward coalescing, appearing first on the neck, and then on the chest, and spreading, and brightest where covered. Measles has a duller red eruption, which appears in crescentic patches around the ears and on the face first, and is brightest where exposed. German measles looks more like measles at first, and then more like scarlatina. Prickly heat is most abundant on or confined to parts where the clothing retains the perspiration. It comes almost exclusively in hot weather. The eruptive fevers are more prevalent in the cooler season—*i. e.*, the season of closed and unventilated houses.

"DRIVING IN" ECZEMA

Is it really dangerous to try and heal eczema on a child's face? My baby was afflicted with it until eight months old, and I was warned not to attempt to heal it, as that would "drive it in" and produce some form of sickness as a result. Our physician prescribed zinc ointment (which did no good), and said the ailment would probably last until baby had all her teeth; then it would pass away. At grandmother's suggestion, however, I tried a mild solution of salt and water when washing baby's face, following that each time with talcum powder, and this did more good than anything else. Then we went to the seashore, where baby had the salt air and sea-water for a final plunge after each bath (the chill taken off by the addition of plain hot water), and within a couple of weeks the eczema had disappeared. We remained by the sea until baby was ten months old, and the eczema has never returned in the same degree, but only in occasional patches during the cutting of a tooth or some little disorder of the stomach, such as babies have. If there is danger in curing the eczema ordinarily, why did no ill results follow the natural cure performed by the sea?

There is no danger whatever in treating an eczema; it cannot be "driven in." The blunder—a very wide-spread one popularly—came about thus: Eczema sometimes depends upon constitutional conditions that vary their points of manifesta-

tion; when a new point is attacked the eczema sometimes disappears. So, too, it is a very common observation that two diseases rarely will go on actively at the same time; hence it has been observed that an eczema has disappeared when an internal disease in no way connected with it has been set up. In such cases the eczema might be said to be "called in," rather than "driven in."

Eczema and other skin diseases should be always healed as soon as practicable. The notions about "driving in" eruptions are ordinarily simple superstitions, and at best are founded on the misapprehension of cause and effect. When a severe illness occurs eruptions sometimes fade, and the careless observer thinks that the illness was caused by the disappearance of the skin disease, when the reverse was the truth. We may, however, say that such eruptions are often very obstinate and hard to cure.

HEAT-RASH

My little girl, twenty months old, is much troubled with heat-rash. We bathe her with bicarbonate of soda and water, and use zinc or lycopodium powder, but neither seems to do her any good. Can you recommend any different treatment? Would it be well to use vaseline? She has lately been having a good deal of bowel and stomach trouble, but that is accounted for by the fact that she is just getting her stomach and eye teeth. We feed her, by our doctor's advice, on oatmeal gruel and milk entirely. Is barley equally nutritious, and would it be less heating to her blood? Would it be well for her to wear linen or lawn next her skin under her thin merino shirt? The rash usually comes out on her face and neck with every warm spell, but this time it is all over her body, and I don't know what to do for it.

Derangement of the digestive tract often increases the susceptibility of the skin, and anything that relieves the former will in so far help the other. Just what things your child needs in this way your physician can best say. The heat-

rash is usually kept up by the excessive perspiration, and the lessening of the latter is also helpful. Limiting as far as possible the child's activity of course will diminish perspiration; sometimes the use of alkaline drinks is useful, but they should not be employed without the consent of the physician who is familiar with her stomach trouble. Again, light and loose clothing—which may at the same time be sufficiently warm to prevent chilling—is very useful, the worst irritation from heat-rash usually being at points where the clothing binds. The lawn or linen shirt under the merino is often useful in allaying friction. Barley is of about the same nutritive value as oatmeal, but less laxative. Some persons find oatmeal "heating," in the sense of favoring eruptions, but this is not the rule.

RED-GUM

My baby girl is six months old to-day. She is plump and usually good. At the age of two months she had red-gum, and it was some weeks before she recovered. It (the rash) remained the longest and brightest wherever the wet napkin touched, and even yet comes and goes there. An orange stain is often present. The opening into the bladder is also a *bright* red. She has been of a very constipated habit, but by giving her a little "brown-bread coffee" I now secure a daily movement. I have been able for over a month now to see four teeth, the upper front ones, but they are not yet through.

My hope is that you can give me definite directions as regards her urine, and also tell me when and how I had best wean her. I have plenty of milk, when I can get milk myself to drink (just now the people with whom I am boarding have but little), and have nursed her regularly until six weeks ago, every two hours in the day—once at night—and since then every three hours.

The "red-gum" and the present rash are not, strictly speaking, the same, but that is a point of small moment. The eruption under the napkin is very common, especially if the urine be very acid, as it probably is when the orange deposit

is present. To correct this tendency (which is probably due to peculiarities of digestion) in a child on the breast is not easy. Something may be done by giving her water, and we think the condition will probably improve, since you have adopted the three-hour rule in place of the two-hour interval, which was continued too long. Locally, washing the parts with weak alkaline washes—*e. g.*, lime-water, or very weak soda solution—will allay irritation. If the skin is irritated, great care should be exercised in cleansing the parts frequently, carefully drying them and powdering or dusting them with fuller's earth or similar preparations.

PSORIASIS

Will you give me some information regarding psoriasis in young children? My little girl, six years old, who is perfectly healthy in every other respect, has been disfigured with this disease for more than three years.

Can the disease be entirely eradicated, and, if so, how long is it likely to take?

Is there any particular period of life when it can be most favorably treated?

What effect have eruptive fevers, such as chicken-pox and measles, on the disease?

As relapses of psoriasis are very common, and as the eruption varies at different times in the course of a year, disappearing and reappearing, it is not easy to say how often a permanent cure is effected. The particular attack may be cured, but the tendency to return may still be present. For this reason no specific answer can be given to the question as to duration of treatment. But this much can be safely said, that some cases remain cured for as long a time as the physician is able to follow them, and that the treatment may require only a few weeks, or may be very tedious.

It should be treated as promptly as possible, and, as age does not seem to materially influence its appearance, it can-

not be said to influence the time at which treatment will be particularly efficient.

Probably no permanent effect. One eruption will complicate the other temporarily.

SEBORRHŒA

Can you tell me the cause of or the cure for the scurf which sometimes forms on babies' heads? It is not exactly like dandruff, being soft and yellow, but forms in small scales about the size of dandruff. With my three children it begins to appear when the new hair begins to come off. It scrapes off easily when rubbed with vaseline, but forms again in a week or two. My nurses have told me never to comb or scrape it off, but no one seems to be able to tell me of any other way of getting it off or any way of preventing its coming. After the hair gets long and thick it seems to become dry, more like dandruff, though still yellow in color.

The trouble is doubtless what is known as seborrhœa. It has a greasy form and a dry form, the latter being called dandruff. Your child appears to have the greasy form, as is usual in infancy. There are some superstitions still surviving against the removal of this so-called "cradle cap," but they are only superstitions. The cause of the disease is an over-activity of the glands which normally secrete the sebaceous, or unctuous, matter of the skin. The cure of it lies in keeping the skin clean by shampooing with soap or slightly alkaline solutions, and afterward applying stimulating lotions. Various practitioners have their favorite formulas.

RINGWORM

My little boy, four years old, has a "ringworm" on his forehead about one inch and a half in diameter. I have used a preparation of potash, and it seemed to stop it for a while. I am now painting it with iodine, but it does not seem to do much good. Can you tell me what causes it, and how I can cure it?

It cannot be hereditary, for I am perfectly healthy, and have never had anything like that, nor has his father.

Ringworm is not hereditary. It is due to a vegetable parasite which grows upon the skin. The cure consists in allaying the inflammation and killing the parasite to the last spore. The tincture of iodine is usually successful if persisted in. It must be painted over all the changed parts of the skin. Daily frictions with green soap—a kind of soap much used for skin diseases—are useful, and any germicide not too strong will help. One of the safest for domestic use is the hyposulphite of sodium. Dissolved in five parts of water, it may be applied locally. On the face care should be taken not to use too strong applications, as slight scars may be caused.

HERPES AND ITS CURE

Can you tell me something about the skin disease *herpes*, also the most effectual remedy, and if it is likely to return when occurring in a child of nearly two years who has still to get her eye and stomach teeth, and if there is any preventive measure to be taken?

The name *herpes* is an old one, and was applied to a number of quite diverse ailments. The ailments to which it is now restricted by most writers are of small importance. One of these is the eruption called "cold sores," occurring about the lips. Cleanliness and a soothing salve like cold-cream generally end the matter. Possibly you may mean some other disease of the skin; *zoster*, or shingles, for instance, was once classed as *herpes*.

"BLACK-HEADS"

I wish to ask your opinion regarding a certain condition of the skin, in the case of my little daughter, which is unpleasant to behold. I refer to the choking-up of the little glands on the forehead and around the mouth, which become blackened

and are known as "black-heads." Then the pores of the skin of the nose are enlarged, and minute fatty particles can be pressed out. This gives to the skin a greasy look. I have asked my physician about the cause, thinking perhaps it was an impurity of the blood. But he claims it is not, and that he knows of nothing to remedy it. I have kept the pores of the skin of the whole body open by frequent bathing, thinking that might be of benefit. Sometimes she has little elevations which are like little pimples, but when they are squeezed out it is just the same fatty substance which exudes—not pus. I would state that her diet has been carefully watched, and only the simplest food allowed. Are these appearances of the skin, especially the little fatty pimples, due to the state of the blood? What course of treatment could you advise me to pursue in order to have the pores of my little girl's face clean, pure, and healthy?

The ailment is easily recognized. The medical name of the eruption is *comedo*. The natural sebaceous follicles are filled or distended with their secretion (sebum), and the dark head is caused by the deposit of dust, or possibly, as some think, by a formation of pigment. The situations most generally affected are the nose and its neighborhood, the forehead and temples, and the upper part of the back.

Constitutional treatment is sometimes necessary, but ordinarily purely local treatment suffices. It consists first of squeezing out the contents of the follicles. This may be done with finger-nails, better by means of a large watch-key, or, still better, a small cylindrical tube with a smooth end, which is less likely to injure the skin. The hollow end is placed over the "black-head," and smart, abrupt pressure forces the latter out of the follicle.

Directly after the use of the instrument on the various points the parts are to be bathed with hot water to diminish the irritation. In addition, the glands are to be stimulated by the daily use of good soap. If this proves too irritating, warm bran-water in which a little borax is dissolved may be used. If the skin is unpleasantly shiny after the use of soap,

rub it with a soft flannel or lightly powder it. But, except among ladies, this shininess of the skin is rarely considered worth notice.

THE CAUSE AND CURE OF HIVES

Will you kindly tell me if there is any cure for hives? I have a little boy, now eighteen months old, who is perfectly healthy in every respect, but is greatly troubled with hives, and has been since his birth. He has only commenced to take solid food within the last two months. I can't observe that his diet has much to do with it. He appears to inherit the trouble from me.

It should be mentioned that the term "hives" is a popular name for several disorders of widely different character. First, it means croup, especially catarrhal croup. This application of the term seems to be not common in America, but it survives in the popular remedy for croup now passing out of use—"hive-syrup." Secondly, the name is applied to various skin eruptions, and particularly to *urticaria*, or nettle-rash. In answering we shall assume that this last is the disease meant by our correspondent.

Both the scientific and popular names just mentioned are derived from that of the stinging nettle (several species of *urtica*), which produces this eruption if it touches the skin, at least in many persons. The eruption is composed of wheals, raised above the surface a sixteenth of an inch or more, which are white or pink and surrounded by a red blush. Ordinarily they are not much larger than a finger-end or a cent; in severe cases they form large patches, and it is not rare to see the face swollen by them until it resembles the face of one afflicted with an erysipelatous inflammation. The outbreaks are usually quite sudden, and often they as quickly subside. Many persons are very subject to the disorder, particularly those of a nervous temperament.

The causes are various. External irritations of many

kinds may excite it. Besides the nettle, which stings by its minute sharp hairs, many stinging insects cause it. A stroke of a whip-lash is a well-known instance of an external irritant causing the wheal. We have seen persons whose skin, particularly after a bath, would rise in the track of a simple pressure of a finger-tip. The skin of some persons is chronically in this state of excitability.

Internal causes are also very various. Most common of all is a sensibility to certain things taken into the stomach, some of which affect many persons. Of these the most familiar are fish, oysters, clams, lobsters, crabs, and berries, notably strawberries. Less frequently vegetables, such as cucumbers and mushrooms, may be the offending food, and some persons are affected by eggs or honey. Many persons are affected only at certain seasons or occasionally, others pretty uniformly by some particular article of diet. The peculiarity does not seem to be always connected with an indigestion, as the effect is sometimes too prompt, occurring almost before the food is swallowed. There are many drugs which produce *urticaria* in susceptible people.

Now, to effect a cure is often extremely difficult; often, on the other hand, very easy. This depends in part upon the varying character of the ailment as to pertinacity and upon the good fortune of the physician in ascertaining what is the particular cause in any given case. The successful remedies may, for the greater part, be classed under three heads: (1) Those which clear the intestinal canal of the offending substance, if food seems to be the cause of the trouble. The household remedy of rhubarb and soda, or rhubarb and magnesia, maintains its place among such. (2) Remedies which act as antiseptics upon imperfectly digested or fermenting food. Among the most popular of these are sodium salicylate and sulphurous acid, or the sulphites. (3) In cases more or less chronic, tonics, especially Peruvian bark and its derivatives, are very useful.

For the temporary alleviation of the itching, sponging with an alkaline solution (soda and water), or with alcohol,

or the rubbing on of an ointment containing chloroform, seems to be as successful as anything we know.

The main point, however, is to find out the cause, and in the case of your baby we think the most probable source of mischief lies in the intestinal canal. An occasional clearing out of the bowels with the rhubarb and soda, and possibly a tonic, will be the safest plan.

IX

COMMON DISEASES

PRECAUTIONS IN A CASE OF DIPHTHERIA

Our little three-year-old daughter is just recovering from a severe attack of croupal diphtheria. She is hoarse and coughs a good deal. Her stomach troubles her, and she is very restless at night. She eats very little, mostly milk with bread or oatmeal gruel strained. I know nothing about the after-treatment of diphtheria. Perhaps you could enlighten me on the following points:

How long is it before the danger of infection is over? We have kept our baby away from her, and it is now one week since she began to mend.

How long does the throat remain inflamed usually and the hoarse cough continue? She cannot speak plainly yet.

What are the symptoms of a relapse?

What is the best preventive against the infection of others and also the recurrence of the disease with every cold, etc. Some recommend belladonna.

In case of paralysis and other after-troubles, what is best to do until medical aid can be procured?

Is a change of climate always desirable when it can be had?

No one can answer this question categorically. Assuming a genuine diphtheria, contagion is possible as long as any of the poison is about, and it may cling to clothing or articles of furniture for a long time. After the sick child is pronounced thoroughly well it should be carefully bathed,

its hair cleaned, and its clothing all changed, and taken to another room—not yet to other children—while the sick-room and its contents are fully disinfected. The child should be kept away from other children for some days longer at least.

Often a long time—the time is so variable that to state an average would be rather a guess than a rule.

A real relapse consists in the reappearance of a membrane somewhere. If it is low down in the throat the symptoms may be those of croup. If higher up, or on the tonsils, or in the front part of the nostrils, the membrane can be seen, or if high in the nostrils it can be inferred from the kind of discharge. Scientifically speaking, there is a relapse or reinfection whenever the bacillus of diphtheria reappears in any of the mucous surfaces after having once been absent. These bacilli often persist, however, for a long time after apparent recovery. The case is not cured so long as they persist, and it may still cause infection of others. Until "a clean culture" is obtained the case is dangerous.

The disinfection and care described above is the best safeguard. There is no tendency for it to come back "with every cold," unless the poison of diphtheria is lurking around. Belladonna probably has absolutely no effect on the poison. It is, however, useful for some sore throats.

The domestic treatment of the paralysis is practically nothing, except nutrition—careful feeding little by little to avoid choking, if the throat is the seat of the paralysis. For the paralysis of the limbs we know of no domestic treatment to be recommended.

A change of climate—to a healthful one—if the change can be accomplished without too great fatigue, usually is of value in promoting recovery from debilitating ailments. It is not called for in diphtheria more than in other diseases, but change might prove beneficial by removing the patient from the influence of the special poison which had been left undestroyed in the home, and which often causes reinfections, as shown by cultures made from the throat.

GENERAL EXPERIENCES WITH ANTITOXIN

What is the present status of antitoxin as a remedy against diphtheria? One sees so many contradictory accounts of its effects in the newspapers that an authoritative opinion will doubtless be welcome to many readers.

This is about the present status: As regards the results in hospital practice there is some disagreement, but we believe that the prevailing opinion is distinctly in its favor. Some of the most active antagonists of the use of antitoxin seem to have made up their minds in advance of experience, and to have collected only such evidence as would aid their preconceptions.

Some time ago the American Pædiatric Society, believing that the real test of the value of the remedy would be made in private practice, determined to collect all the evidence it could concerning its use by general practitioners. At the meeting of the society in Montreal the committee reported the results of the investigation. Several hundred physicians had contributed their experience. All doubtful cases of diphtheria were omitted, leaving about fifty-five hundred unmistakable ones. The results were very encouraging indeed, and the most enthusiastic reports were from practitioners whose previous experience had been most disastrous.

It is not pretended that the antitoxin, even of the best quality, is a "sure cure" for diphtheria. There are many reasons why it cannot be; but that it is a very potent remedy, outweighing in value any other, and probably all others, as against the disease *per se*, now seems a fair statement. It does not and should not displace all other proper treatment, medical and surgical, but it does make its results more favorable, and nowhere, we think, is this more striking than in cases of diphtheria of the larynx, where some interference on the part of the attendant has become necessary. In this connection the society above mentioned collected further evidence, with similarly reassuring results.

ANTITOXIN AS A PREVENTIVE AND CURE

What is your opinion of the value of antitoxin as a preventive of diphtheria? Do you approve of giving it in all cases of diphtheria?

The value of antitoxin is more manifest every year. With the early recognition of the disease by bacterial culture, and the prompt use of antitoxin in all suspected cases, the death-rate from diphtheria has been wonderfully reduced; for instance, in the city of Boston to less than ten per cent. The efficiency of the antitoxin is very much greater if given early —that is to say, as a preventive of the development of the poison in the system, than as a cure for its ravages. Its value as a preventive of the disease in those exposed but not manifestly infected is fully demonstrated. To the writer's mind, the use of the antitoxin, if obtainable, is imperative in all cases of diphtheria, and also in all threatening cases in which the diagnosis has to wait for bacteriological proof.

QUESTIONS AS TO DIPHTHERIA AND MEMBRANOUS CROUP; POPULAR MISCONCEPTION OF MEDICAL TERMS

Is there any difference between diphtheria and membranous croup, and is the latter contagious? And is it only allopathic physicians who consider them identical?

We may say at starting that so far as we know there never was any school of physicians calling themselves allopathic or allopaths. But by a singular misuse of words the name is popularly applied to those who do not accept the doctrines of homœopathy or any other pathy. The special point asked about has never to our knowledge been made a distinctive one between any schools of medicine.

The identity of diphtheria and membranous croup has been very much discussed for many years, and the opinion

has varied very much with time. Physicians who were in practice about thirty-five years ago—the time that diphtheria first reappeared in this country after a very long absence—pretty generally considered it as a very different disease from the then well-known membranous croup. As time has passed, this opinion has lost ground, and has nearly disappeared. We doubt if the question can be absolutely decided. But without any intention or desire to dogmatize, we may say that our own notion is this: That the membranous croup of forty years ago was not diphtheritic in our present sense of a disease due to the Klebs-Loeffler bacillus; it was rather a rare disease as compared with diphtheria to-day, and the evidence of its contagiousness was wanting. On the other hand, to-day a membranous laryngitis (croup) is practically always diphtheritic, the change probably being due to the general diffusion of the diphtheria poison. There are many kinds of sore throat characterized by a membrane-like exudation, concerning the nature of which a good deal of doubt and difference of opinion exists among those well qualified to judge. Thus, there are many cases which every one pronounces diphtheria; other cases which every one is equally sure are non-diphtheritic; but between are many kinds of tonsilitis concerning which a guarded opinion must be given, unless one takes the short and easy method of classing them all together as diphtheria—a method which tends to magnify the repute of the user, as a vast majority of his cases will get well.

We may mention one term only to condemn it: It is "diphtheritic sore throat." If any disease is diphtheritic it is diphtheria; if it is not diphtheria it is not diphtheritic. If the physician is not sure of its nature he should have the courage and honesty to say so, and not hide behind a tricky phrase. The danger of using it lies in the proneness of people to be misled by a meaningless name, and neglect necessary precautions. Every doubtful case of throat disease should be treated as dangerous until a culture proves it to be not so.

In leaving the subject, we may mention a similar dan-

gerous blunder in the supposition that scarlatina is a mild or innocuous form of scarlet fever. Scarlatina is simply the Latinized technical name for scarlet fever; the blunder probably arises from mistaking the termination "ina" for a diminutive. Scarlatina is neither more nor less than scarlet fever.

CROUP

Please state the difference between false croup and real croup. There seems to be much confusion on the subject. Many persons speak of "croup" simply, when evidently false only is meant. Is not the real croup a very dangerous sickness, and false croup a comparatively harmless one?

Any disorder which produces a peculiar change in the sound of the voice and the cough, and which is attended with more or less difficulty of breathing, is called croup. But the kinds usually thought of when the name is used are the catarrhal or "false" croup, and the membranous or "true" croup. The term "spasmodic" croup is applied properly to a spasmodic disease of the larynx (*laryngismus stridulus*, or "child crowing"), but carelessly to the "false" croup mentioned above. The "false" croup is a catarrhal laryngitis, and the symptoms are due to the temporary changes in the mucous membrane of the parts. It is, as you suppose, attended with more alarm than real danger. In "true" croup a fibrous membrane forms in the larynx or windpipe, upon the surface and more or less in the substance of the mucous membrane. This membranous croup is at the present time usually considered to be of diphtheritic origin, and some physicians believe that it always is and always was diphtheritic, but this is a disputed point. This "true" croup is a very dangerous disease. Besides the dangers from obstruction in the larynx and windpipe, it entails all the other dangers of diphtheria. The "false" croup is one of the manifestations of a "cold" in some children—called popularly "croupy." It is certainly more likely to occur in improperly fed children.

The term "croupous" is in medical parlance applied to a fibrinous exudation occurring on a mucous membrane in any situation; thus, that type of pneumonia which has such an exudation is called croupous pneumonia.

CHARACTERISTICS OF MALARIAL DISORDERS

Can you tell me what is the matter with my little girl? She is two and a half years old, and large and strong for her age, but on several occasions she has complained early in the afternoon of feeling very tired, and has wanted to lie down; she has then become very sleepy and flushed, and has nearly got into a kind of stupor, lying with her head and face almost buried in her pillow, and with her knees drawn up to her chest; this is accompanied with fever, and every now and then she has been sick at her stomach, and has then fallen off again into the same state, from which no noise will rouse her; toward night she gets cooler, and in the morning wakes up much better and quite bright, but still a little flushed and feverish. She has had these attacks three times; the second time it lasted a week, and every day was nearly a repetition of the previous one; the last attack lasted about two or three days.

I have had a doctor's advice, but with apparently little result, and I should like to know what is really the matter, as I fear a recurrence of the attack. I feed the child on meat every second day, and only give a little of it to her with potato; her other diet consists of bread and milk and bread and butter, with light puddings, and nothing else. The strange part of the attack is this repetition of the fever and sickness at the same hour each day, and the apparent entire relief from it in the morning.

The stupor and other symptoms doubtless depend upon the rise of temperature. This may be due to a multitude of causes. But the distinct periodicity of the attack would make the diagnosis of intermittent fever a very probable one, although as regards children we are very shy of using the words "intermittent," "remittent," or "malarial," as they are made the cloak of a world of ignorance. Intermit-

tent fever is the most distinct of malarial disorders. In a typical case in an adult the chill which announces a paroxysm occurs with considerable regularity—daily, on alternate days, or less often, according to the variety of the fever. A fever with a daily access is called a quotidian ague; one with an access on alternate days is a tertian ague, and so on. But in childhood the frank chill is less common and the fever is less regular than in adults. And herein lies the danger of error, since in most diseases of childhood the temperature is more subject to fluctuations than in adults. An irregular or paroxysmal fever may arise from a multitude of causes, and may be—indeed, often is—classed as "malarial" or "remittent" simply from the temperature range, while the malarial poison has nothing whatever to do with it, and the real cause behind the fever may be overlooked and its treatment therefore neglected. Many physicians do not in a doubtful case make a diagnosis of malarial disease until they have after proper search failed to find any other reasonable cause.

Fortunately, the true malarial fevers are usually quite amenable to medical treatment, and quite recently it has become possible by examination of the blood to make a clear or probable diagnosis in cases formerly very difficult of determination.

REMEDIES FOR MALARIAL FEVER

I have a baby, nine months old, who for almost two weeks has had chills every other day. I had one, and I suppose he took the start from me, but he still has them. I have taken an abundance of quinine, and have rubbed him with it, and the day before his last one I had the doctor inject some in his arm and give him a solution of quinine three times, but it did not keep the chill off. However, I will give him more of it again. I hate so much to give quinine; the acid put in to dissolve it curdles his milk, and it is such a fearful dose to take. I would like to know if there is not something more simple that will do the same good. I have always nursed him, and he has always been well. Before he was sick he weighed

twenty-four pounds, which I think is good weight for a baby of that age.

There is no meaning that we can understand connected with the adjective "simple" as popularly applied to remedies. The ancient meaning of a "simple" remedy was, as nearly as may be expressed, an herb or vegetable remedy supposed to have a "simple" or specific curative power over some disease or upon some organ. The bark from which quinine is gained would have been a typical example. But (and this is why we emphasize it) practitioners are not a little bothered by importunities for some "simple" remedy to do this or that, the meaning being, so far as can be guessed, to ask for a remedy which shall be very potent against the disease or unpleasant symptoms, but entirely devoid of any other effect. All of which is as wise as the seeking for a gunpowder which shall be of the greatest power in propelling the ball and which shall produce no recoil of the gun.

As applied to your case, this means that, while quinine is in many ways—to some more than to others—a remedy of very disagreeable action, yet it and the kindred alkaloids associated with it in Peruvian bark are, far and away, the best remedies we have against malarial fever. It may be mentioned that the hydrochlorate (muriate) of quinine can be dissolved without the aid of acid. Yet the bark and its derivatives sometimes fail, for reasons not easy to understand. The remedies next in esteem are arsenic, Warburg's tincture, blue gum, probably in about the order named. It is very difficult in many cases to break up a malarial fever while the patient remains in the region where the disease has been acquired. But patience with the treatment will probably effect a cure. It is probable that a more general recognition of the agency of certain mosquitoes as the conveyers of a malarial-poisoning organism will render it easier to prevent these persistent occurrences. So far as we now know, malarial poisoning always started (not counting relapses) from the bite of a mosquito.

THE CAUSES AND TREATMENT OF TYPHOID FEVER

I should be glad to have your opinion about the general treatment of those who have had typhoid fever, and to know if you think that there is any special care required, say, six or seven months after recovery, either with grown persons or children.

While on this subject can you advise me where to get any knowledge of how typhoid fever is caused or taken? It seems to me that the treatment of typhoid has made wonderful strides, but as far as I can judge from my experience with the faculty, they are as far from knowing the origin of typhoid in the patient as ever. It is said that it must be taken inwardly, as through milk or butter or something of that kind; and others say from the excrement. Many cases, however, have been known where it was from none of these.

The recovery after typhoid seems in some cases to be pretty prompt. Often, however, it is very slow, taking months, and even years, before the last traces of its damage are gone. Each case must be judged by itself, and the error, if any, should be on the safe side.

Any recent work on the practice of medicine will probably tell you all you need to know—not a controversial pamphlet, but a text-book "up to date," which is meant for the use of practitioners. Probably you could borrow one from your own physician. We think the origin of typhoid fever is much better known than anything else about it. We know that it comes from just one poison, and we know by sight the peculiar bacillus which is, or which manufactures, that poison. The method by which that poison is introduced into the system in a given case may be uncertain, but often when we are acquainted with the surroundings of the patient in the past the doubts are solved. Unfortunately, in a great proportion of cases, even in intelligent circles, nothing accurate can be learned as to where the patient had been or what he had done. It is true that the poison is mainly, almost exclusively, passed from the body in the stools; it is

true that infection of water and food is generally through infected stools. The links are often lost, but in cases where epidemics have been sufficiently important to excite research it has almost uniformly been found that the circle has been: An initial case; infected stools so disposed of as to infect water; this water, drunk or mixed with food or used to wash vessels to be used for food. A recent epidemic in a town near New York was confined to the patrons of one milkman, whose premises were found to be infected. Sadly enough, some of the patients confined themselves to a diet of the very milk which was bringing them the poison, before it was discovered. One case, it is said, occurred in a person not a patron of this dairy, but he had drunk milk when taking a meal at the house of a patron. Suppose this person had gone elsewhere before sickening, and that the epidemic had not been sufficiently important to awaken inquiry, a fresh epidemic might have been started, the origin of which would possibly have remained a mystery. Similarly, we have had epidemics from oysters taken from the water near the mouths of drains.

SYMPTOMS OF TYPHOID FEVER

Please tell me something of the symptoms of typhoid fever. In what way do they differ from the symptoms of ordinary fever?

As the phrase "ordinary fever" conveys no meaning to the writer, the symptoms of typhoid only can be mentioned. These have been well studied in adults, and in them make a pretty distinct picture of disease. The principal symptoms of the onset of typhoid are decided lassitude, with headache, coated tongue, and loss of appetite, and very often with nosebleed, the severity of the symptoms increasing gradually until after a few days or a week the patient is obliged to take to the bed. The temperature meantime, and perhaps for a week longer, gradually climbs, rising at night, letting up a little

mornings, but with a gradual ascent which has been compared to a flight of steps. There are usually abdominal symptoms, such as gurgling and tenderness, often—probably more often than not—diarrhœa and about as frequently a peculiar eruption of rose-colored spots, especially on the back and abdomen. Let this slight sketch stand for the adult type of typhoid. The infantile type varies from it considerably.

In the first place, typhoid is of exceeding rarity under the age of two years. From that to five it is still exceptional, but from five to ten years it is not uncommon, and after this later date the type is nearly the same as that of adult life. But the cases which occur between, say, two and ten years—both dates approximately stated—have the peculiarities which are usually considered distinctive of typhoid much less pronounced. The fever, for instance, is less likely to come on with the insidious ascent before described. It is more likely abrupt in its onset. With it are often symptoms of disordered stomach, such as vomiting, and the case might easily be taken for an acute gastric disturbance. The diarrhœa is more likely to be absent, and if present to be mild. The eruption is less frequent and less marked, and the fever is, on the average, of somewhat shorter duration than with older children or adults. The depression, however, is much the same.

It will be seen, therefore, that the peculiarities of typhoid in childhood are not very striking, and the diagnosis must often be made by the physician by the aid of blood tests and the like. The only lesson for the nursery guardian is: In any case of continued fever have medical advice.

THE USUAL SYMPTOMS AND TREATMENT OF SCARLET FEVER

Please describe the usual symptoms of scarlet fever. How long does a simple case last, and what is the recognized mode of treating it?

The ordinary striking symptoms are vomiting, usually without nausea, and sore throat, with fever. The onset of symptoms is sudden. The throat, and the roof of the mouth as well, is quite red, and in the latter situation the redness is made up of very fine dots, much as is the skin eruption when it comes. The fever varies with the severity of cases from perhaps 101° to 105°. The eruption follows in a variable time, but as a rule it is from a half-day to a day and a half. It usually is first seen upon the neck and breast, but the whole skin should be examined. It spreads rather quickly over the whole body, and continues for a variable time, but in the great majority of cases this time is between three days and a week. The desquamation or peeling being an essential part of the disease, the latter must be considered to continue as long as any desquamation exists, which may be from one to two months. Probably five or six weeks will cover most cases.

There is no recognized treatment special to this disease. Rest in bed and the relief of symptoms as they arise suffice for mild cases. The essentials of treatment in ordinary cases are to meet symptoms and await their natural disappearance. Severe or complicated cases may call for a great deal of medical care. The treatment of a case of scarlatina should never be assumed by any one without medical guidance, if the latter be obtainable. Baths are extensively used in the treatment of the disease, but even these should be specifically directed if possible. Sequels follow even the mildest cases, and these, as well as the severe ones, should be carefully watched and isolated.

CHARACTERISTICS OF MEASLES

Can one always tell whether a child is going to have measles or scarlet fever? What is the best domestic treatment for measles?

Measles usually begins with a cough and catarrhal symptoms. But these do not show that the child is going to have measles,

but that he already has it. In scarlet fever the onset is abrupt. If, as may be the case among non-professional people, only the eruptions are considered the disease, then the earlier stages (see p. 145) may give the warning. But to the medical man these symptoms are as essential as the rashes.

The best domestic treatment is to send for the doctor. If, after examining the case thoroughly, he believes that it can be left to domestic care, he will give directions as to that care, and also indicate the symptoms that will demand his attention.

One of the principal dangers in the treatment of even mild cases of scarlet fever and measles without professional guidance is the non-recognition of complications and sequels. Those in scarlatina are commonest in the shape of throat and ear troubles, kidney inflammation, and the so-called scarlatinal rheumatism. All of these complications may induce secondary ones, and the watching of a case of scarlatina is never a light task, even to the physician.

The complications and sequels of measles are more strikingly manifested in the respiratory and the digestive organs. Measles often awakens latent lymphatic troubles, and the eyes may remain tender (chronic conjunctivitis) for a long time.

GERMAN MEASLES OR RÖTHELN

Does a child that has German measles require any treatment? Is this trouble always easy to recognize, or does it not sometimes resemble real measles?

This disease, of which the scientific name is *rubella*, has been definitely recognized as distinct from measles and scarlatina only in comparatively recent years. Its name, "German measles," shows that it has been considered a variety of measles. In fact, it is a disease by itself, although it does resemble, especially in its eruption, sometimes measles, sometimes scarlatina; much more often the former.

One of the most striking peculiarities of the disease is its

variability of appearance, and very experienced physicians are often obliged to base their diagnosis rather upon the concomitant circumstances and the prevalence of the disease (for it is one that is rarely, if ever, seen except in epidemics) than upon the appearance or history of the individual case. A fair description of an average case would be something like this: An eruption is discovered on the face, or even covering the whole body, without any previous signs of illness, although fever, catarrhal symptoms, vomiting, etc., may have existed. The eruption consists of slightly raised reddish spots, usually not more than an eighth of an inch in diameter. It generally begins on the face, runs over the body, and goes off in the same order, and is gone in about three days. Usually the spots do not run together and the fever is slight, lasting about two days. The "peeling" of the skin rarely amounts to much. Physicians usually expect to find some swelling of the glands, particularly in the back part of the neck.

While exceptions do occur, it is true that the disease rarely kills or even is attended with severe complications or after-troubles. Therefore, if the disease is certainly recognized, little treatment in the sense of medication is called for. Painful or distressing symptoms may require attention. If they do not occur, good nursing will meet all the requirements. But careful regimen and nursing go far to prevent these untoward symptoms and complications, and should always be employed. It is obvious that isolation of the cases is desirable.

THE CAUSES AND CHARACTERISTICS OF RHEUMATISM

How can one recognize rheumatism in young children? What causes it?

Rheumatism is a term of such wide and vague meaning that it has been seriously proposed to banish it from medical nomenclature. For our purpose we will take it to mean that disorder known as rheumatic fever, or acute rheumatism.

In adults this disease is characterized by a good deal of fever, painful and swollen joints, and many other well-known signs. In children, especially if young, the symptoms are not so striking. If the child can talk, it probably will complain of soreness in joints or muscles. If it be too young, it may show signs of pain on handling. There is usually moderate fever. The symptoms are unfortunately often overlooked, or called "growing pains." "Growing pains" are pretty certainly something else than what they are called, and should not be neglected, as a sad lot of heart lesions come from them. Whenever a child complains of pains, especially if it has tonsilitis or a tendency to nervous twitching (chorea), it is fair to consider it a case of rheumatism. The cause of rheumatism, according to what we think is to-day the prevalent opinion of those best able to judge, is an infection, probably microbic. The matter is still under investigation as well as discussion.

THE CONTAGIOUSNESS OF MUMPS

Is mumps a very contagious disease? What is the treatment?

It is probably one of the most contagious disorders. Treatment, beyond making the person comfortable, is rarely needed in uncomplicated cases. As the person cannot chew and swallow without some discomfort, food should be liquid and bland. Owing to the contagiousness, the patient should, if possible, be isolated until quite well. Unfortunately, the contagiousness seems to last a long time.

THE VALUE OF GARGLING IN SORE THROAT; DIFFERENT KINDS OF SORE THROAT

Do you advise gargling for sore throat?

How can one tell whether an ordinary slight sore throat will not develop into a serious one?

Please mention the different varieties of sore throat and their symptoms.

Gargling is a convenient method of applying remedial liquids to that part of the throat which is not far back. It is of small account in the pharynx. The solutions are better applied anywhere by means of an atomizer making a fine spray.

No one can tell. Some of the points which help to discriminate diphtheria from other forms of tonsilitis are given on page 139.

The varieties of sore throat are almost as numerous as the infections causing disease. If divided according to locality, there are tonsilitis, pharyngitis, etc. If according to appearance, one could divide again. Thus, for tonsilitis, there are simple tonsilitis, follicular or lacunar tonsilitis, diphtheritic tonsilitis, suppurative tonsilitis, or quinsy, etc. If according to cause, sore throat may be rheumatic, gouty, diphtheritic, scarlatinal, etc. It is easy to see that to detail the symptoms of each would take a goodly chapter.

ST. VITUS'S DANCE

Please describe the symptoms of St. Vitus's dance. What is the cure?

The one characteristic symptom is that with which probably every one is familiar, even in childhood—namely, the erratic convulsive movements of the patient, winking of the eyes, convulsive twitchings of the face, jerkings of the hands and arms as well as of the lower limbs, and contortions of the body. It varies greatly in degree. The treatment is largely hygienic, both physical and mental, and, medicinally, tonic. It is not a good ailment for domestic experimentation.

SIGNS OF HEART TROUBLE

If a child gets out of breath and has sometimes a rapid pulse, are these signs of incipient heart trouble? What are the usual symptoms?

It is not easy to give precise answers to questions which have no precise meaning. The symptoms mentioned might be due to a genuine heart disease, meaning valvular disease, or to a faulty action of the heart due to anemia, or merely to the excitability of the heart's action often seen when the fault is somewhere else. The term "incipient" is hardly applicable to heart diseases—the genuine ones.

ALCOHOLIC STIMULANTS IN FEVERS

My little girl of five years has the scarlet fever, and our physician prescribed for nourishment milk punches every two hours. I would like your opinion on the subject of giving spirituous liquors to children in cases of fever. I am under the impression that whisky and like stimulants only add fuel to the fever.

Alcoholic stimulants, properly used, do not "add fuel to the fever." The condition demanding their use is not one that can be discussed without a good deal of knowledge of physiology and pathology. Every judicious physician considers alcohol as a drug to be given or withheld in any case, precisely as any other drug, according to the circumstances that exist and the ends to be accomplished. The unfortunate abuse of alcohol leads the laity as well as some physicians to treat it as if it were a thing by itself. The abuse of opium and other narcotics, of quinine, or of purgatives is no reason against their proper medicinal use. So with alcohol. If you can trust your physician with other drugs, you may with this.

THE VALUE OF COD-LIVER OIL IN CASES OF SCROFULA

My child is six years old, very heavy and fat, but weak and very pale. She goes to a kindergarten. Her appetite is queer; sometimes she eats very little and sometimes too much, and then mostly bread, very little or no meat, and vegetables none whatever. I have doctored with her and been to hospitals. The physicians say she is scrofulous and needs cod-liver oil,

and will be stronger when she is a year older. She has always had a very bad cough, owing to bronchitis. I have given her cod-liver oil for over a year, but notice no improvement. She still coughs very badly, and at night when she coughs she sweats. Is cod-liver oil a good remedy and the only remedy in such a case?

It is quite probable that the opinion that has been given you is correct—namely, that the child is scrofulous—and that she has had, and still has, bronchitis. The rearing of such a child entails much patient care upon the mother, but in the end it is usually successful. Cod-liver oil is not the only remedy, but is, perhaps, more important than any other one. Besides, it would appear that she should have some remedy to stimulate the appetite, and to relieve the cause of its fitfulness, which probably is a disorder of the stomach. The paleness suggests that she needs iron also. We do not, however, think it desirable for you to try to pick out the appropriate medicines yourself. It would be better worth while for you to ask your physician about these points.

A CASE OF TAPE-WORM IN A FOUR-YEAR-OLD CHILD

I am very much troubled over a case of "tape-worm." Our little girl has been troubled with this for nearly two years. We have given repeated treatments of fern, pomegranate, and pumpkin seed. Our physician does not suggest any other remedy. Can you tell us of something that will help us in any way? Are there specialists in this line; if so, will you kindly name them?

Please give me all the information concerning "tape-worm" that you can—the best remedy and how to apply it.

We may say in starting that we know of no "specialists" in this line among reputable physicians. Some have studied the parasites of the human body with great care, as a matter of science, but they have promptly put their knowledge at the disposal of the profession.

Three tape-worms are well known as living in the human intestines. Of these the broad tape-worm is rare in this country, and practically is found only in immigrants from certain parts of Europe. The other two, called the beef tape-worm and the pork tape-worm (from their ordinary source in human food), are not uncommon, the beef tape-worm being the most frequent of all. The life history of one of these creatures is, in a few words, this: The excrement of a person suffering from tape-worm is carelessly put upon fields, or in some place where cattle or hogs may swallow the embryos of the worm contained in the discharges. After reaching the digestive tract of the animal the development of the embryos begins, and they travel through the tissues until they make a lodgment, most commonly in the flesh or liver, both used for human food. The flesh so infected is popularly called "measly." If the meat were thoroughly cooked these partially developed worms would die; but much meat is eaten raw (bologna sausages, etc.) or imperfectly cooked. The larva is set free in the digestive organs of the person eating the meat and begins to grow. The differences in the appearances and development of the two species are too slight to interest the non-professional reader. In fact, until quite a recent period the two were considered as one. There is one difference, however, worth mentioning: The tape-worm from beef is usually solitary, of that from pork quite often several are found in one person. This fact, not generally insisted on, may, we think, sometimes explain the supposed failure of treatment—that is to say, only one worm of several has been killed, and vigilance relaxed prematurely. Probably only an expert could decide from small parts of the worm to which species it belonged. The segments of the pork worm, however, are usually thinner and less opaque than those of the beef worm. The segments of the latter are more likely to creep out of the bowels than are those of the pork worm.

The three remedies you have tried are all excellent, and usually effective. Besides them, kousso and oil of turpentine should be mentioned. The latter is one of the most certain.

Whatever remedy is selected, its use must be preceded by several days of fasting or as scant a diet as can be borne. Neglect of this preliminary often is the cause of failure. The dose of the medicine selected and the preparation must be determined by the physician to suit the peculiarities of the patient, as most of the efficient drugs have some drawbacks which must be guarded against. It is nearly always necessary to follow the administration of the special remedy by a purge. Last of all, it is necessary to remember that after many failures success may be gained by perseverance.

THE CAUSES OF MENINGITIS

Will you please state the probable causes of meningitis in its various forms, also whether there is any safeguard against so fatal a disease in young children?

In the case of children meningitis is usually caused by some infection. Probably the most common is tubercular. The epidemic cerebro-spinal meningitis seems to depend upon several kinds of micro-organisms, especially several kinds of cocci, including that which causes pneumonia. Meningitis may occur as a complication of most of the eruptive fevers, influenza, etc.

The only preventive is the avoidance of the diseases with which it is associated or which it follows.

Injuries to the head sometimes occasion simple meningitis.

JAUNDICE; BILIOUSNESS

Is it unusual for a child of five to have jaundice?
What can be done for biliousness?

Jaundice is one of the rarer conditions in young children.

If by "biliousness" is meant an attack of gastro-intestinal catarrh, the treatment is not one for domestic practice. If that word is intended to mean the tendency shown by some

persons, young and old, to such attacks, the prevention must lie in a careful dietary, avoidance of indigestible articles of food, as well as of excess in the use of proteids and fats, regularity of the bowels, and good general hygiene.

HYDROCEPHALUS, OR WATER ON THE BRAIN

How can one recognize early enough the distressing disease known as "water on the brain"? What is the proper treatment for it?

The name "water on the brain" is a popular one, and has been applied to more than one form of inflammation of the brain membranes (meningitis), with collection of liquid. We do not know which you have in mind in asking your question. The chronic form, called *hydrocephalus*, is most readily recognized by the increased size of the head, which is a pretty constant symptom. This often reaches such a degree that the child cannot hold up its head. If the enlargement begins early and advances rapidly, the functions of the brain are interfered with, the acuteness of the intelligence and of the special senses being impaired, with other nervous manifestations. In slowly progressing cases this is often not so; but in any case death usually occurs in the early years.

There is another and more frequent disease called "water on the brain," or acute *hydrocephalus*, which is the tubercular form of *meningitis*. The early symptoms of this disease are not pronounced nor certain, and are more often recollected after the disease is recognized than noticed at the time. These beginnings may be mistaken for some other disease, or the reverse. But after a time distinct brain symptoms appear, such as stupor, convulsions, dread of light, screaming, etc., one alternating with another, with some fever. It is not worth while to detail the painful sequence of symptoms that conduct to the fatal end, which as a rule comes in from one to four weeks.

As to the treatment, nothing need be said. Many years

ago the writer heard a distinguished medical lecturer say, "The only reason we have for treatment is the hope that we have made an error in diagnosis." If recovery from a genuine attack of the disease ever occurs, it is so rare that the most experienced observers express their doubts of its existence, and many frankly say that they have never seen it.

THE CHARACTERISTICS OF HERNIA

My little boy, now twenty-one months old, has a protrusion of the navel about one quarter of an inch, or the size of a large bean. It has been so since he was three months old. I put a compress on it while he wore bands, but it did no good. Finally, I discarded both band and compress, and it grew no worse; neither does it improve. It was not caused by crying.

What treatment would you advise, if any? I have read that rupture of the navel should be cured before the age of three years, or the cure would be difficult.

I do not consider my little boy's rupture very bad, but it ought not to exist at all. Do you think there is a probability that it will grow worse if not attended to?

First examine the protrusion to see if it be really a rupture, and not one of the naturally protruding navels. This you can probably determine (if not, your physician can) by observing whether the protrusion contains anything that can be pushed back within the body. This movable part, if it exists, constitutes the real hernia. If it is a real hernia it ought to be attended to.

THE CAUSES OF RUPTURE

What causes rupture? People tell me carelessness of the nurse. What form of carelessness?

Rupture is caused by the combination of some effort of straining acting upon one of the naturally weak points of the abdomen. The navel and the groins are in infancy the usual points. We believe that in infancy it is commonly due to the

fact that the children who are ruptured are less strongly built at these places of danger than are other children. We know of no form of "carelessness of the nurse" likely to cause rupture. The binders often put on by nurses through mistaken care we think more likely to do harm than good. The blame is put upon the nurse because the ordinary person cannot conceive that his or her baby could have a weak spot.

TREATMENT OF HERNIA

Is hernia ever cured in a boy three years old by wearing a truss, and, if so, what kind of a truss would you advise? Ought a child so afflicted to be allowed to romp and play as other children do?

Hernia is sometimes cured by a truss. The kind must be determined by the needs of the case, and the treatment necessarily demands a long time. The child should be restrained in its games only so far as regards those involving special strains. For it seems to us that to make a self-conscious invalid of a little child is worse than an uncured hernia. A gameless childhood is dreary indeed, but we ought to add something more than your inquiries strictly call for—namely, that at the present time the truss is not our only recourse. If it does not do its work satisfactorily, a radical operation can be performed which in good surgical hands is safe and in a great proportion of cases successful in making a real cure.

TREATMENT OF A PROTRUDING NAVEL

Will you tell me if a navel extending about three quarters of an inch needs special attention? What is the effect of the rupture on the child, and what, if anything, must be done to cure it? It does not seem to trouble him, and the family physician says it needs only a tight flannel band, but I object to tight bands and use the knitted ones. If an appliance is needed, is a home-made one of value?

Ordinarily, a navel which protrudes three quarters of an inch in a child three months old does need attention. There are occasional exceptions. The effects of a rupture if neglected are usually not great at first, some pains and discomforts perhaps being all; but whoever has a hernia carries a threat of a sudden and fatal peritonitis from the possible strangulation of the hernia. Besides, even if no dangerous results happen, a hernia is always an added burden to carry through life. Your physician advises the flannel band for a particular reason; you have no right to set up your preferences against his judgment, at the risk of grave results to the child. If you doubt his judgment, or if his treatment is not efficient, try some other physician, but do not neglect the navel unless you are assured by the present physician, or some other good one, that there is no hernia.

FALLING OF THE BOWEL

Can you advise me what to do for falling of the bowel in a young child? What can be done to prevent it?

The falling usually occurs at stool. To prevent it, keep the bowels free, so that straining is unnecessary; also, if the tendency to fall is marked, it may be better not to set the child upon the chair, but to let it have its evacuations in its napkins in a recumbent posture. Or, if the chair is used, do not let it sit a long time. As soon as the evacuation has occurred wipe and wash the parts, and then, with the fingers anointed with vaseline or some other unguent, press the bowel upward, the central part first, as that probably came out last. After the last part goes back, follow it up an inch or more with the finger, to make sure that all is in place. Dry the parts, and if the tendency to come down is marked put a pad of absorbent cotton or gauze against the seat, and retain it with a napkin or bandage. This is for the emergency. The cure depends upon the cause or attendant conditions, and for it a physician's advice is needed.

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HARMFUL HABITS

THUMB-SUCKING

In your personal observation, have you ever seen children whose teeth projected, or whose upper jaws were V-shaped, because of having sucked their thumbs?

We have often seen the V-shaped jaw in children who were thumb-suckers. It is reasonable to suppose that the habit was the cause, although it would be impossible to prove that the jaw might not have had this shape had the child not sucked its thumb, because such shaped jaws belong to some families, and no one can recollect whether or not the elders were also thumb-suckers. Further, we have seen other and more complicated distortions of the upper jaw, and even of the nose, probably caused by the pressure of thumb-sucking, which it required much trouble on the part of the dentist, and expense on the part of the parents, to correct. Those who have given most study to the matter (scientific dentists) agree in considering thumb-sucking a potent, if not the main, cause of the V-shaped jaw.

OBJECTIONS TO "BABY'S COMFORTER"

Will you be kind enough to enumerate the reasons why a "baby's comforter" should not be used? I have never used the article in question, but I really do not know why I should not, for I know no argument against it, and while I should not like to see it in my baby's mouth constantly, it probably would stop a disagreeable noise when she is waiting for her milk to warm.

To enumerate the reasons—that is to say, many of them—would be tedious. The function of the medical adviser is rather to give his opinion, based on his experience, than to detail the experience which formed the opinion. Still, we can give you a few of our reasons in short space. We believe that the habit of chewing or sucking, except upon food to be swallowed, is undesirable, on physiological grounds as well as for other reasons. The tobacco and gum habits are properly alluded to in this connection, because we think that this habit of chewing things other than food is an expression of nervousness, and that the "comforter" habit (and thumb-sucking as well) is the direct progenitor of those more objectionable habits, through the establishment of the desire for something in the mouth. The method of the expression of this desire is very various. Witness, for instance, the contemporary caricatures of Lord Palmerston, whose figure would hardly have been recognized without the straw in his mouth. Further, unless we are mistaken, this desire to suck or chew, when it is not an expression of pure nervousness, does express some positive discomfort, ordinarily in the digestive tract—mouth, pharynx, stomach, or bowels—and that it would better be cured than masked.

HOLDING THE BREATH

My little daughter, now past fourteen months, has somehow acquired the habit of holding her breath. This is particularly trying, and sometimes looks alarming, when she does it at the table, with some food in her mouth. Could you tell me what to do in such cases? What is the best way of treating this habit, which, I suppose, is the result of temper? Sometimes a trifling refusal will bring it on, generally at times when for some reason she is out of sorts. Should I humor her, rather than run the risk of bringing on this distressing exhibition, or should she be made to understand every time that she cannot have her own way? Is the habit really dangerous, and, in case of a particularly severe show of temper, would a smart slap bring the breath back?

The holding of the breath in itself is not dangerous, but is a trick that some children acquire. Of course, her whims should not be humored, assuming her to be in good health. She can be made to breathe easily enough by any of the manœuvres that are used to start respiration when it has been accidentally stopped (or has not been established, as is often the case with a new-born infant), such as the "spank," a dash of cold water in the face, or violent blowing in the face. Whether it is worth while to resort to such measures, which, while entirely physiological, have the appearance of a punishment, must depend upon individual cases. Most children, if they find that the mother cannot be made to yield to their desires and cannot be frightened by this holding of the breath, promptly abandon the habit, while it is certainly prolonged by indulgence.

NAIL-BITING AND ITS CURE

In despair, I write you to learn, if possible, how to prevent our boy of ten years from biting his nails. Although a very bright boy (of nervous habit), he has his hands almost constantly in his mouth, which, to our mortification, gives him the look of an idiotic child. We have tried gloves, with no success; latterly some one watches him to keep his hands down from his face, and the child is constantly hearing, "Hands down!"

If you will suggest a remedy for this disease, weakness of the will—which is it?—you will have my warmest thanks.

The habit of nail-biting is mortifying and to a certain extent disfiguring, but it should not be taken too seriously—that is to say, it should not be worried over as a real disease. We believe that it should, in a general way, be classed with habit-spasms, because it is, or was originally, an expression of a discomfort, usually nervous, and is continued from habit and absent-mindedness. Weakness of will we do not think it usually is, unless any neglect of self-control or any indolent self-indulgence is to be so called, because we have known some

persons, who carried nail-biting to an extreme, who were by no means lacking in will-power if anything awakened it.

If we are right in this view of the nature of the habit, the cure would consist in first doing all practicable to strengthen the nervous system and make it comfortable and quiet, and then the local preventive measures will take better effect.

The local measures generally adopted are the use of gloves, which you have already tried, and the application to the finger-ends of some very strong-tasting substance, the taste of which recalls the child from his abstraction, which is the root of the habit. The gloves (or bags, which are often used) will prevent nail-biting, but not the sucking of the fingers or thumbs. The substances used on account of taste are various, aloes tincture being the commonest. But we believe that general hygienic improvement is quite as important as the local measures.

THE CHEWING-GUM HABIT IN CHILDREN

Is it true that it benefits children to chew gum, and that it helps them to digest their food? I send you inclosed an extract from an article in a leading religious paper claiming that it is good to promote the flow of saliva by chewing gum, and that it prevents children from becoming too hungry between meals.

These discussions as to the harmfulness or benefits of chewing gum come up in the newspapers from time to time. It is usually believed that the chewing of gum is distinctly injurious by fatiguing the salivary glands; but now and then a dissenting voice is heard urging that the increased flow of saliva is useful, both before meals and between meals, in aiding the progress of digestion. That the flow of saliva is essential to digestion, and most of all for the digestion of starchy foods, every one knows, but, after all, we feel bound to give our vote against the chewing-gum habit. If, in chewing, the saliva were always swallowed, and if, being swallowed, it could be placed just "where it would do the most good,"

and if, lastly, it were necessary for any one to take starchy food unchewed into the stomach, the argument for chewing gum or some other similar substance would be strong. But for the saliva to do the most good it should be thoroughly mixed with the bolus of food in the act of chewing.

Far better than to chew gum is it to thoroughly chew the food itself. If we are right in thinking the chewing-gum practice an unwholesome one for adults, it is doubly so for young children, who are to a certain extent irresponsible, and who easily contract the habit of bolting food and of chewing everything else. Our advice would be to prevent as far as possible the chewing-gum habit and to encourage prolonged chewing at the table; and this is especially necessary when, as is usual in childhood, the diet is largely made up of cereals. Many of our attempts to render, by cooking, food easy of consumption may, through carelessness, result in rendering it difficult of digestion. For instance, it is very desirable that potatoes should be well chewed; to make this easy we mash them; as a result, they are frequently not chewed at all, but bolted. Similarly, we take bread, which should be chewed, and which usually must be, to a certain degree, before swallowing, and make of it milk-toast, which is taken into the stomach almost untouched by the necessary saliva. If children come to the table too hungry, give them first a drink of milk or a little broth, and keep the food that should be chewed until hunger is sufficiently appeased to allow them to take solid food.

LIP-SUCKING

Is lip-sucking common in young children? Is there any way of curing it?

It is not very common. We have noticed it in those children who have a strong tendency to some such habit, and have been prevented from its first expression—say, thumb-sucking. There is no direct method of cure until the child is old enough to be reasoned with.

XI

PHASES OF DEVELOPMENT

THE INFANT'S NORMAL WEIGHT

How much ought the normal child to gain in one week? What is an average or fair weight for a child of four months?

Growth varies greatly according to age. During the first week there is usually a slight loss, which loss is really made in the first three days. After this is overcome the gain is continual, but not uniform. It varies first of all with different children, depending somewhat, but not entirely, upon the original size and strength of the child. A quarter of a pound per week is a fair gain for the first month or two, but the gain often reaches half a pound weekly for this period. By the age of four months it is slackening, being usually not much above a quarter of a pound per week. The weight at that age will be on an average about twelve pounds, sometimes fourteen or more, but the weight at four months, owing to the progressive retardation of growth, is on the average more than half what it will be at one year. Thus a child who weighs fourteen pounds at four months cannot be expected to weigh above twenty-five pounds at twelve months, if so much; and the weight at one year will not on the average be again doubled before the eighth year is reached. It is usual to consider that the birth weight shall be doubled at five months and trebled at one year, but this is not true if the birth weight is exceptionally large.

MEASUREMENTS AND WEIGHTS OF BOYS AND GIRLS AT VARIOUS AGES

Will you please give the average height and weight and chest measures of a two-year-old, also of a three-year-old child? Is there found to be a difference between an average boy and an average girl of these ages in regard to size and weight?

While we have a good many figures regarding the first year, and abundance concerning the school age—six years and upward—we have few regarding the interval from one to six years. Dr. Holt has recorded the results of weighing and measuring three hundred and seventy-two children from the second to the fifth year. These results are as follows:

Two Years.—Weight: boys, 26.5 pounds; girls, 25.5. Height, 32.5 inches for both sexes. Chest, middle of inspiration, boys, 19 inches; girls, 18.5.

Three Years.—Weight: boys, 31.2 pounds; girls, 30. Height, 35 inches for both sexes. Chest, boys, 20.1 inches; girls, 19.8. Boys keep ahead until about twelve years, then fall behind until about fifteen years, when the adult preponderance of the male begins.

It is to be borne in mind that for certainty of deduction the number of cases must be very large (thousands); moreover, the race, the social condition, and the locality must be noted. As regards our own population, the investigations of Bowditch, W. T. Porter, and Boaz are particularly interesting, bringing out differences according to native or foreign parentage, the well-to-do and the poorer classes, and between different cities, east and west, and many other details.

WHEN CHILDREN FIRST BEGIN TO SEE

Is it true that a baby cannot see anything when it is born, and not for days afterward? When does it learn to distinguish colors? Do not a child's eyes express very early its pleasure or pain?

Vision, according to Preyer, is not in the child's power in his first weeks. He begins by distinguishing masses of light and shade; a small bright spot, when very bright, as a candle-flame, he can separate, after a few days, from the surrounding gloom. Of colors he learns first to know red and yellow; the blue end of the spectrum gives him much more trouble, possibly because blue is more absorbed than the other colors by the blood-vessels of the retina. The involuntary closing of the lid when an object approaches the eye is wholly wanting at first; it is developed by the unpleasant feeling of a sudden change in the field of vision (not as a means of warding off a recognized danger), and its occurrence in the second and third months is a sign of completed power of seeing. Wide-open eyes are a sign of pleasure; discomfort and pain are accompanied by a partial closing of the lids. For the first three weeks the child's evident look of pleasure on being put into the warm bath is due to the open eyes shining from an increased secretion of the tear-glands.

DEVELOPMENT OF THE SALIVA AND TEAR-GLANDS

According to several well-known authorities, a baby does not secrete saliva before four months. My baby has drooled constantly since three weeks, and is now two months old; what does this signify?

I also read that it is impossible for a very young baby to shed tears. Mine has fairly rained tears since the first week. Is this an unhealthy symptom?

All statements regarding the time at which this or that function appears are based upon averages of observations. One does not, for instance, expect teeth to appear before the seventh month, yet a physician of experience will recall instances of much earlier eruption of the incisors, and may even have seen them at birth. There is nothing to be considered in the case of your little one except to note that the saliva and tear-glands developed earlier than the average. This is not a harmful exhibition of precocity.

THE DEVELOPMENT OF SPEECH

Why do some children begin to speak so much later than others? Is this necessarily an indication of some physical weakness? All my children began to talk late, although otherwise normal in their development.

What do you consider the average age when children ought to begin to talk?

We cannot answer the question in any but a general way. The power of speech being a mental gift, it is developed very differently both as to degree and time. Fluency of language is no gauge of mental power in general. The most eloquent lawyer is not necessarily the ablest one. The peculiarities of development in time also vary. We recall many striking instances. Entire families of good mental abilities have shown very tardy development of speech. One member (we have in mind an actual instance) was practically speechless until about four years of age, when speech began suddenly and about as fluent as the average at that age. Other members had such broken and lisping forms of speech as to be unintelligible to those who were not in daily contact with them, but all after a while talked as well as this child. Instances might be multiplied of these peculiarities and vagaries. We should have no anxiety about a child who was not deaf and was apparently intelligent, if speech came late.

The average age would depend upon what is meant by talking. Children say a few words ordinarily well within the first year—"Mama," etc.; after that all the variations above described appear, very great contrast being noticed in children of the same age of kindred blood and similar surroundings.

IMPERFECT NUTRITION AND ITS CAUSES

I wish to ask advice about my little boy, who was five years old lately. He is of very good height for his age, but thin, his ribs and backbone showing plainly. He is quite irritable at

times, and is altogether a very nervous child. Lately he wakes up in the night and stays awake sometimes an hour. He often wets the bed. His digestion and assimilation have always been rather poor.

What can I do for him? Would you recommend cod-liver oil, and can you give me some hints in regard to his diet?

It is quite clear that the child's nutrition is imperfect, and the few symptoms given are expressions of this fact. It would be helpful if you knew what causes have led to this condition. You will find it profitable to inquire into the heredity. Many people never think of this as regards their own families. Thus, consider: Is, or was, the thinness and under-nutrition a characteristic of the child's ancestors, either in adult life or in childhood? Did they outgrow it, etc.? Also, has the child's condition been caused or aggravated by known illnesses or by errors in feeding, etc.? All these things are necessary to a proper understanding of what is to be corrected. Next is to be considered—and here medical advice is useful—the question, Is the child not definitely ill now? When these things are known, treatment will be intelligent. The diet must be governed by the same things, especially by the present condition of the digestive organs. As to cod-liver oil, we can only say that it is very generally useful if the stomach bears it.

DROOPING SHOULDERS

Would you advise me to put braces on my boy of four, who has drooping shoulders?

Unless a child is too feeble to hold himself up, we do not think any support advisable. If a child stoops because of near-sight, as is sometimes the case, he should have glasses. The ordinary kind of stoop in childhood is best cured by plenty of active play, not too violent, but enough to develop the muscles of the shoulders, back, chest, and, in fact, of the whole trunk.

LEFT-HANDEDNESS

Our little girl, aged two years and four months, is inclined to be left-handed. At the table she makes use of the left hand entirely, and in cutting with a small scissors she uses the left hand. What can we do to break her of the habit? I have noticed that our baby, aged seven months, also shows signs of preferring the left hand for grasping and holding things to her mouth. We are a right-handed family, but I have wondered if we have not made the children left-handed by always offering them things with the right hand. Naturally, they take them with the left. Is there anything in this theory, or do children usually use the left hand first, as they first see things "upside down"?

Left-handedness is not such a misfortune as some people seem to think. It is such chiefly in that it makes the left-handed person noticeable. It is not an impairment of power or success, except in the use of tools or implements constructed expressly for use in the right hand, like the scissors, for instance. Most left-handed persons can be taught to use the right hand for most acts, but when force is required the left hand is pretty certain to be called upon. This being the case, it is well not to neglect the left hand entirely. Since two dexterous hands (two right hands, in other words) are a great convenience, our notion is that she should be taught to use the right hand for all things where the use of the left would excite comment, such as the pen, the knife at table, etc. The right-handed habit of the civilized races seems to have been in considerable degree acquired. How, no one knows. In infancy it is often wanting in those not left-handed, and has to be taught. And to our mind it is often taught to a foolish and even harmful degree—that is, to such an extent that the left hand is nearly useless, except for simple grasping.

XII

WEANING

SYSTEMATIC WEANING

I apply to you for advice in regard to *systematically* weaning my baby. She is now ten months old, well and hearty and plump, though having as yet no teeth. She never has been fed at all, nothing except water ever being put into her mouth. A chicken-bone or a crust of bread she often has to play with, but that can hardly be called food. There is still an abundant supply at "Nature's fount," but I would prefer to wean her as soon as settled cool weather comes. What should she have to begin with, and in what quantities?

Although there are exceptions, a child can usually be successfully weaned with no great difficulty if the mother simply persists in her purpose. The infant, of course, does not enjoy the change, and the greatest obstacle to the weaning is the mother's natural desire to yield to the little one's importunities. As a contrast, it is interesting to study the skill with which the domestic animals wean their young at the proper time. In the weaning the welfare of the child is, of course, the prime consideration, but the mother's comfort should not be overlooked. For the latter reason, if the supply of milk be still large, the abrupt cessation of nursing may be undesirable, owing to the distressing filling of the breasts.

It is assumed that the weather is settled and that the child is suffering from no ailment of moment. It will much simplify matters if the mother has a trustworthy assistant

who at first can attend to the feeding, as the child will not then be constantly begging for the breast, and, if hungry, will probably take the food prepared for it. The mother should keep out of sight, and, if possible, out of hearing. The food should be given at the usual hours for nursing, and the quantity should be as nearly as possible the same as that taken from the breast. The amount taken from the breast at a nursing is determined by careful weighing of the child just before and just after a suckling. The weight gained in ounces represents practically the same number of fluid ounces of breast milk taken. If the amount is not known, the bottle may contain at first about a gill, and if it should prove to be not enough more can be prepared for the next time. The food should be freshly made each time and given at blood-heat. The particular kind of food must depend upon circumstances. Where good cow's milk can be had it should be the basis of all baby's food. As to what should be mixed with it, different persons naturally differ slightly. Our own preference (the child being already ten to twelve months old) is for barley-water to dilute it and sugar of milk to sweeten it. Usually two thirds milk and one third barley-water will do to begin with. As the child grows older and stronger less dilution is necessary, and the change can be gradually made. If the child's digestion is delicate the milk may be peptonized with benefit, and by some of the methods a liquid very closely resembling human milk may be obtained. If, however, a healthy child is old enough to be weaned, this precaution is rarely necessary. It is of course understood that if a child must be weaned early the food must differ to suit the age.

DROPPING THE NIGHT MEAL

At what age and how can a baby best be weaned nights? If he wakes up and wants the bottle, should he be allowed to cry?

At six months usually, by eight months pretty certainly, a child can go from, say, 10 P.M. till early morning, and would

better do so. There is only one way to accomplish this. Arrange the day's meals so that the last comes at or about 10 P.M. Then, if food is cried for, give drink and get the child to sleep without feeding. If it will not go to sleep, wait till considerably after its usual time before feeding, and each night make the hour later until your set time is reached. Usually two or three nights at most win the battle. Most of the difficulty comes from the bad habit of feeding a child whenever it cries, until it comes to feel that it cannot become quiet without the breast or bottle, when overfeeding may be the real cause of the restlessness.

NURSING DURING PREGNANCY

If a mother is nursing her baby and discovers that she is again pregnant, ought she to wean the baby immediately, or would it do any harm to continue nursing him for some time, if the milk does not appear to disagree with him, provided she feeds him besides? If the milk does not make the baby sick, would it injure the mother or the coming child if she continued nursing the baby? If so, in what way?

It is usually much better to begin the weaning as soon as the pregnancy is known, for the milk is very much impaired in value, and it is the additional food, not the breast milk, that the baby really depends upon for his nourishment. It is not to be expected that the milk will "make the baby sick" in the sense of directly ill, although this sometimes occurs; but its results are seen later in his impaired state of health, these results being often considered mysterious, although they should not be. The effect on the mother and other child may not be so evident, perhaps not demonstrable at all as regards the child, but the strain upon the mother is unwarrantable, and but few women can remain undamaged by it.

XIII

SLEEPING

THE HAMMOCK AS A SLEEP-INDUCER

Do you consider hammocks injurious to babies? My baby is nearly five months old, and for four months I have used a hammock for her, getting her to fall asleep in it. It made her sick once, when I first got it. With this exception I have never been able to discover any bad effects from it; but I have often wondered if it could be harmful in any way.

The hammock, if not violently swung, is no more injurious than the cradle or the rocking-chair, presupposing that it is a full-sized hammock, which allows the child to lie without being doubled up. The whole question whether any kind of oscillation is worth while as a means of getting a child to sleep we cannot enter upon. Such manœuvres are not necessary, and, if begun, usually must be continued. The child is not benefited, the mother is taxed. Nevertheless, the pleasure of putting one's baby to sleep in the arms often, if not always, repays the mother for the tax imposed, at least while it is not too heavy. And in view of the generations of our cradle-rocked and chair-tilted ancestors we cannot say that these rhythmical motions are usually injurious.

PUTTING A BABY TO SLEEP WITH THE RUBBER NIPPLE; "MAGIC" EFFECTS OF SUGAR-RAGS

How shall I teach my four-weeks-old girl to go to sleep alone by herself? A friend of mine accustomed her first baby to go to

sleep with a rubber nipple in her mouth, which practice she kept up till she was three years old. Does this ever produce sore mouth?

Although "sugar-rags" are an abomination to me, I have been guilty of trying them after all other means have failed, and when imperative duties demanded my attention. The effect has been magical, as, in almost the time it takes to tell it, she would be sound asleep. When awake she is as good and quiet as I can wish for.

A four-weeks-old baby ought to sleep two thirds of the time, if she is well. *Nurse* her to sleep, and when her lips slip from the nipple lay her down carefully in the crib. Unless your nurse has already accustomed her to rocking and "coddling" on the lap, you should have no trouble in getting her to lie still by the hour, sleeping or waking. Why give her the rubber sham at all, since she will only suck in wind and very likely have colic, and will certainly form an absurd habit?

As to the sugar-rag, the saccharine, farinaceous, and greasy foods that make up its contents seriously derange a baby's stomach. Colic, wind, and disordered bowels follow in the train of the objectionable things.

EXPERIMENTING WITH ANODYNES

Will you please tell me what anodyne is best for me to give my six-months-old baby? She is a bad sleeper, and I cannot stand being awake so much at night. I have given her chamomilla, and once or twice a drop of laudanum. Is there anything better than these?

We advise you to give no anodyne at all nor any sleep-producing medicine, unless it is recommended by a physician after a thoughtful consideration of her case. The proper thing to do is to seek to the best of your ability, aided by your physician if necessary, for the cause of the wakefulness, and remove that cause if possible. A cause exists, and can usually be found.

A NIGHT-LIGHT IN THE NURSERY

What is your advice about burning a dim light in the nursery at night? Can it have a bad effect on children's eyes?

The light will do no harm, especially if it be so shaded as not to fall directly upon the child's face.

THE VALUE OF THE PILLOW IN SLEEPING

Please inform me if you think it advisable and beneficial to have an infant of ten months sleep without a pillow, or the head elevated at all. I have always heard that a child becomes more straight by lying on its back without the head being raised.

It is really of no great importance, provided the pillow is flat and thin. If a child were to lie flat upon the back it would be better to have no pillow. If upon the side, as adults sleep, a thin pillow would be better. In fact, the infant, after it is able to move, lies in a very composite way, and practically it seems to us that a slight lift to the head, just to save the neck from twisting, is rather the more comfortable.

THE MOST COMFORTABLE PILLOW

Please give me some information in reference to the contents of a pillow calculated to give the baby the most comfort. I use at present one filled with best quality of white horsehair, but find that the same has a tendency to fall in. The head sinks into the pillow, so as to obstruct the free and easy breathing, the nose being buried in the pillow. I have heard of using "bran" for filling. What do you suggest?

Hair is the best, but it should be thin and firm, so that it will not fall in. A little child's pillow needs to be not more than two inches thick at the most.

THE FIR-PILLOW

Will you please inform me whether the fir-balsam pillow is *really* quieting and beneficial to a restless, nervous child? If so, where can it be obtained?

The fir-pillow is an "esthetic" fancy much used as a lounge ornament in towns. The odor of the fir-balsam is to many persons very grateful. The emanations of evergreen trees have been sometimes thought to be beneficial to those suffering from pulmonary complaints, but their value, as distinguished from that of the surrounding health-giving circumstances, is not proven. It is possible that a nervous child might be pleased with the odor of the pillow, and so quieted, but we do not suppose that it has any real medicinal value. The ancient pillow of hops is quite as efficient. The materials for filling pillows are prepared throughout the fir-bearing regions wherever summer visitors go. The cost is slight.

OBJECTIONS TO HAVING CHILDREN SLEEP WITH ADULTS

Is it detrimental to the health of a child three years of age to sleep with a grandmother of eighty? And if so, in what way is it injurious?

We think it wiser that children sleep by themselves when practicable. There is a prevailing belief that it is not wise for the young to sleep with the old, but the reasons given for it smack more of superstition than science. The real ground of objection, we think, is this: The aged often will not, and perhaps from habit cannot, bear the amount of fresh air and ventilation that nowadays we think best for children as well as adults. In addition, they are apt to overburden the bed with wrappings, which does not conduce to the best sleep.

POSITION FOR SLEEP

What is the best position for a baby to sleep in?

In our judgment, what is called by physicians the "semi-prone" posture is most natural to babies, as to the inferior animals—*i. e.*, on the side, but with the back turned a little up. In this position a slight turn of the head makes breathing easy, and the weight of the abdominal organs rather helps than hinders respiration.

SLEEPING ON THE STOMACH

Is it harmful for a child to sleep on its stomach?

We have seen many infants and children, and some adults, who had the habit of sleeping on the stomach, and have never known any harm to come from it. Provided they do not bury their faces in the pillows in a way to prevent their having sufficient air, we do not know what harm is likely to result. It is easy to see why sleeping upon the side is easier to most of us than in any other position, but if a child is more comfortable lying on the breast and abdomen we should let it alone. The observation of habits of the domestic animals would reassure you. If you have a house-dog, notice how he will sleep upon his side or flat down upon his stomach, with his head upon his forepaws. The cat will sleep in any position, side, stomach, or back, and all without any damage.

THE CAUSES OF NIGHT TERROR

My little boy of five years is greatly troubled with bed-wetting. He is taken up at 10 P.M., but he invariably needs changing of garments and bed-clothing at least once before morning, and very often twice. Our physician, suspecting some irritation, performed the operation for phimosis on him last June, from which he has been extremely tender ever since, the parts even at times approaching rawness on the under side. He also has

severe forms of nightmare, screaming out in apparent delirium, with eyes wide open, bright, and dilated. His whole form is trembling violently, and he presses together his thumbs and fore-fingers, as if in the act of picking up. We always take him to a lighted room and talk gently, and he always answers our questions intelligently in one breath, and in the next screams again at his imaginary visions. He generally comes out all right in about ten minutes.

Can you tell me if there is any connection between the irritation resulting in bed-wetting and the nervous condition causing the nightmare? I forgot to mention we are confident these disturbances are not caused by anything he has eaten, as they occur on going to bed after having no supper. Is he liable to outgrow these troubles, or does he need treatment at once?

The night terror may possibly be due to the sensitiveness of the prepuce, but it is more likely not so, for the form of the terror is the usual one, and we think that if it were due to conscious irritation at that point he would be likely to put his hand to the irritated part. In spite of your confidence that the terrors are "not caused by anything he has eaten," we should urge you to consider his dietary. For it is not necessary that the offending substance should have just been eaten to cause trouble. It may not be an acute indigestion, but a general condition. Thus, some children with very good digestions do have too much nitrogenous food—meat, eggs, or milk—for their easily excited nervous systems.

It is, further, wise to prevent or cure the foreskin irritation if possible. The best preventives are: making sure that the parts are thoroughly dry after each passage of urine, and seeing that the tender place is not irritated by any garments. Besides, the use of soothing powder or ointments, of which bismuth powder or zinc ointment are good examples, will tend to heal any existing irritation. It is true that children do usually escape from these night terrors as they grow older, but we would suggest watching carefully for any convulsive movements, and, if noticed, consult the physician again.

WORMS AS POSSIBLE CAUSES OF TALKING IN SLEEP

I have a little boy, three years of age, who has the habit of talking in his sleep. He does not seem to be troubled with nightmares, for he very rarely shrieks; but he often talks quite loudly, and generally "grinds his teeth." Some months ago I mentioned the matter to a physician, who thought it might be nervousness, and believed it would soon pass away. One of my neighbors thinks his restlessness at night may be caused by worms. It is for various reasons not easy for me to send for a physician, the nearest being several miles distant. Can you suggest a remedy, or at least a cause, for the trouble mentioned?

Perfect health in children is generally accompanied by perfect sleep. Some kinds of broken sleep are very suggestive of certain ailments; but this is not true of all. The symptoms described in the inquiry are not very distinctive. The age of the child makes it probable that all irritation from the teeth is past. The fact that the sleep-talking is already a habit excludes the idea that it is indicative of the approach of any acute disease. The cause, then, is probably something chronic or persistent in its nature. Of this sort there are a great many, and the exact one can often be discovered only by careful inquiry into the details of the child's regimen. A child may be made restless or talkative in sleep by any of the causes which produce similar conditions or only dreams in adults, and a dream may be very disturbing to a child without reaching the terror of a nightmare. Among these common causes we may mention difficult or painful digestion due to errors either as to the kind of food or as to the time of its administration, discomfort from an overheated sleeping apartment or too much covering, or the reverse conditions. Any form of mental excitement during the day, and especially during the latter part of the day, has a similar effect. There are a multitude of other little details that need to be looked to before the cause can be positively ascertained.

As to the importance of worms as a cause of the symptoms

described and of many others, popular belief is far more closely in agreement than the opinions of medical men. Without pretending to settle a vexed question, we may give what we think a fair statement of the matter. The frequency of worms varies greatly in different localities; and apparently there is a similar difference in the severity of the affections caused by their presence. The particular worms most common in children are the "thread" or "pin" worm, and the larger lumbricoid or "round-worm." The local irritation from the former is very evident, and it often prevents, as well as disturbs, sleep; but remoter and general disturbances are rarely attributed to this kind of worm. Its presence can usually be determined by careful ocular inspection. It is the "round-worm" that plays such a great part in popular pathology. Now, while it is doubtless a fact that the presence of this worm in the intestine does often cause general disturbance, it is certain that it does so far less frequently than is commonly supposed. It is very often present without any particular disturbance of health being noticed; and it may be said that, of all the so-called symptoms of worms, there is not one that may not be due to some other cause. Even when ocular inspection has established the presence of the worms, it may be that they are not the cause of the symptoms attributed to them, and treatment beyond the removal of the parasites may be necessary. This symptom of disturbed sleep, with "grinding of the teeth," is probably one of the most constant with children suffering from lumbricoids, but it may also be constant in any chronic disturbance of the bowels; and a physician may really consider the presence of the worms only a coincidence or a complication of the bowel troubles, while the nurse is sure that it is at the root of the whole matter. It is therefore inadvisable to give a child "worm-lozenges" or the like without the distinct opinion of a physician, who can also advise as to the treatment of coexisting troubles which may persist even if the worms be discharged.

XIV

BATHING

A BATH AT NIGHT

When a child about three years old, able to play out of doors in the grass all day in the summer, comes in at night—of course, very dusty—is it advisable to give the daily bath then, or would a slight sponge-bath at night, in addition to the morning bath, be too much?

The chief difficulty about giving the bath at evening is this: The child comes in tired and hungry as well as dusty, and wishes to eat and then probably to sleep. The bath cannot be given immediately after eating, and to keep him hungry until after the bath may precipitate a domestic storm. For these reasons (not for physiological ones) we think the light sponge-bath will be found less fatiguing to the child and to its mother than the other plan, and, all things considered, probably better.

THE EFFECTS OF COLD AND WARM BATHS

Can you tell me in what cases cold baths are beneficial to children? Are they strengthening to a delicate child? Is a warm bath weakening?

The constitutional effects of baths vary with the temperature. Cold, as is well known, if it does not exceed the resisting power of the person, is a tonic, producing increasing tissue changes, and consequently increased nutrition. The cold bath shares this strengthening power. But

if the cold is too great or too long in its application the exhilarating "reaction" does not take place fully or at all; the result is fatigue, exhaustion, or even severe prostration. The cold bath, moreover, has curative value under some circumstances because of its shock to the system. The shower-bath, the douche, and a variety of baths in which a current of water is used are exaggerations of the cold bath, inasmuch as the cold and the shock are combined; and the same is true of the sea-bath. The cold bath, in all its varieties, is chiefly used as a tonic, and extensively employed for children who are feeble. It seems unnecessary to insist that, as the bath is intended to strengthen the little patient, it should under no circumstances be used in such a way as to depress. Assuming this, we may mention some of the conditions under which it is likely to prove beneficial. Children who have a sluggish circulation, with poor appetite and feeble digestion, are often markedly benefited by systematic cold bathing. So also are children who are constantly "taking cold" and children suffering from rickets. Furthermore, in some kinds of nervous ailments, such as St. Vitus's dance (chorea), as also the peculiar crowing croup seen most frequently in rickety children, cold bathing is useful, but in these instances it should not be used without medical sanction.

The warm bath is not stimulating, but relaxing. It produces a fulness and increased color of the skin, due to the greater amount of blood brought to it. A warm bath is at first agreeable, but, if prolonged, enervating. The hot bath produces like results, but in a higher degree; and if the temperature be near 110° it can be borne but a short time without causing excited action of the heart and other disagreeable symptoms. These, in a few words, are the principal effects of hot and cold baths, and from them their remedial uses may be inferred.

SOAP

Is the use of soap necessary or desirable in daily baths? For children's use which is preferable, a good Castile soap, or some of the numerous "scented" or other "fancy" varieties?

Soap is necessary only at places where especial need of cleanliness exists—face, neck, armpits, seat, and groins. But as the moderate use of bland soap is not harmful to most skins, it is easier to go over quickly the whole or most of baby's body than to pick out spots for washing.

"Castile," if of good quality, is excellent. There are other excellent soaps made. But avoid scents. Your object is to clean the baby, and to know if it is sweet when you have finished you must avoid artificial smells. A clean baby is sweeter than any perfume.

DIMINISHING THE FREQUENCY OF BATHS

When shall baby's daily bath be discontinued? Never, I hear some say; but suppose the mother's time and strength are very much taxed?

If a change is to be made, how many baths should be given a week, and are they to be given night or morning?

You answer this question yourself. It is to be continued as long as you can give it. It is given in the main for cleanliness, and is no more necessary at six months than at six years. The immersion is not a necessary part of the bath. A quick sponging does as well.

As many as you can give. If you can give only three baths a week, or two, or even one, give them. They are preferable in the morning, as a cool sponging is a protection against taking cold, and the exposure is more likely to occur by day than by night.

THE OUTING AFTER A BATH

How long after a bath should a baby be kept indoors? My baby is nine months old; she usually sleeps till eight or later. I give her a bath at once, letting her sit two or three minutes in water at 90°. Lately, after wrapping her in her blanket, I have sponged her in water at 50° before drying and rubbing. She enjoys it all and is warm afterwards.

Last winter I sometimes took her out in an hour. If she slept till nine, and I went out in the forenoon, I could not wait longer. But I feared it was hardly safe, though she has never taken cold in consequence, and, indeed, has never had a severe cold. When a little baby she wakened at 5 A.M., had her bath at eight, and was fed afterwards. But she would never take a long nap after her bath, often none at all.

We believe that after a bath at 90° the child could as safely go out in an hour as at any time—supposing it fit weather to go out at all. If she is sponged in water at 50°, we believe that she could go out as soon as dressed, with the same presumption as to weather.

XV

TEETHING

IS NORMAL TEETHING PAINLESS?

I would like to ask if the teething of healthy children is without pain or discomfort? I am no believer in the theory that every derangement of the system during dentition is attributable to that as a cause, but after an experience with three strong, healthy babies of my own I cannot readily accept the theory that—as one physician expressed it—"dentition is as painless a process as the growing of the finger-nails."

My little six-year-old, just cutting the "seven-year molars," complains frequently of soreness and discomfort of the gums. Is it irrational to believe that a younger child, with less vigor for endurance, suffers equal discomfort in cutting the first teeth, and that, using the only means of expression at his command, he becomes fretful and peevish, gradually developing more or less feverishness in consequence of the discomfort?

My youngest child, whose dentition has been very slow, cut her third incisor when she was fourteen months old. For weeks the tooth had seemed so near the surface that I expected every day to feel its edge. Then the gum became inflamed, the covering skin was hard and tightly drawn, the child fretful. On the fourth or fifth day I discovered a small gathering of pus at one corner of the uncut tooth. I sent for my physician, who lanced the gum, freeing the tooth and giving immediate relief to the child. Is such an experience unusual, and what is the probable cause of the pus? The child has no tendency to humor of any kind, and at the time was in her usual health. Could such a case be attributed to derangement of stomach or bowels, or was I right in considering it an incident of dentition?

Let us put it in another way. Not "that the teething of healthy children is without pain and discomfort," but that pain and discomfort—if unusually great—are at least presumptive evidence that the process of the evolution of teeth is not going on in a normal or healthy way. This change is not a quibble, but a different point of view. For, first, the phrase "a perfectly healthy child" has no meaning unless that judgment has been passed by a competent authority. We recall scores of children so described to us who were, to our mind, anything but healthy. Further, in practice we have, not so very rarely either, been asked to admire as evidence of unusual health or strength what we considered marks of disease. Apparently what is generally meant by the phrase "perfectly healthy" is that the person described does not come, or at least comes rarely, under medical care. In adult life persons who attend without complaint to their daily avocation are considered "perfectly healthy," although one may have chronic constipation, another frequent headaches or oft-repeated neuralgic affections, while another may have all the obscurer manifestations of gout, but escape the typical swollen toe, and so on to the end of the chapter.

Now, the change of view regarding teething which has come to the great majority of physicians who especially study children's diseases is not that they do not think that the baby suffers or that they do not sympathize with its sufferings, but that they no longer think that this suffering is natural or normal. If the child suffers much from dentition, even locally, they think that the child is not entirely well, or the reaction of a physiological process would not be so severe. Very often indeed one skilled in children's ailments can point out where the deviation from health is which probably underlies the troublesome dentition. We do not say that it "is as painless a process as the growing of the finger-nails," but many experts at least will be inclined to say that in health it ought to be. There is no manner of doubt that children's gums are often painful at dentition—we do not here discuss the remoter ailments often charged

to dentition—but it is doubtful if the pain ought to be of such a nature as to disturb sleep or to cause any great discomfort. Take a case from your own letter. Your little one cuts its third incisor at the age of fourteen months, a delay so great as to be of itself sufficient cause for looking the child over carefully for a disordered condition of nutrition to account for it. Then an abscess forms in the gum. This shows very unusual irritation, and, according to our present belief, pus cannot form unless the necessary microorganism has been introduced, in this case probably from without. The occurrence was "an incident" (or rather accident) "of dentition." It was probably not due to any temporary derangement of stomach and bowels, but rather primarily to that peculiarity of system which delayed dentition, and, as we said before, to the introduction of one or other of the pus-exciting organisms into the tissue, most likely from without through handling the gum or the chewing upon some substance, as teething children often do.

The change in view, we have said, leads not to any doubt of the baby's suffering, but to giving greater attention to his condition—to the condition before and during teething, with the view of preventing pain and illness.

If the question is asked: What does it matter to us in the nursery whether the many disorders attending teething are caused by it or not? we answer just this: If the parents believe that dentition causes all the ailments attributed to it, they are, as we daily see, prone to consider the ailments as nearly, if not quite, as much a matter of course as the natural teething process, and they consider it useless to try to cure them until teething is complete. Moreover, by a sort of inverse reasoning, if any of the disorders which they are accustomed to regard as dependent upon dentition happen to exist, they infer that the child is teething, whether he be so or not. As a result of all these errors and confusions, it too frequently happens that disorders which might have been very tractable at the outset are allowed to progress unopposed until they reach a serious stage. If, on the con-

trary, we assume that teething is rarely the real cause of disease, the parent will seek some other reason for any disturbance of the system that may exist, and will endeavor to remove it, either with or without the aid of a physician. The difference of opinion is then not a simple dispute of terms, but one which has a practical interest in the nursery.

LATE TEETHING

I cannot think that my baby had any tendency to rickets, as he was exceptionally strong and robust, but when a year old he had only two teeth, and did not get the stomach and eye teeth until two years and a half old. He seems to have good teeth, and I had somewhere imbibed the idea that late teething made good teeth, as I knew of four children who got no teeth until about a year old, all of whom had beautiful teeth in after years. Do you consider late teething as unhealthful?

Some normal differences exist as to the time of teething—the medical books set seven months as an average for the first tooth to show, but many children begin two or three months earlier, and some later. Late teething is, by common agreement of all who have studied the subject, one of the signs of rickets, and it is a sign easily noticed by the mother, while she might overlook others. Rickets in its less marked forms is one of the commonest disorders of early childhood, and one which seems to be habitually overlooked unless it has advanced to the degree of producing deformities.

Late teething is never an advantage. A child's teeth may be delayed by rickets, and, after his recovery, come through in good enough shape, and the second set of teeth may escape damage altogether. The late examples you speak of were probably, to judge from the usual course of such cases, children who were kept on breast milk which was really not up to the mark, and only after weaning did they get material with which to push their teeth, or, if bottle-babies, they had at length become accustomed to their food.

On the other hand, late teething alone—*i. e.*, unaccompanied by any other evident derangement of health—cannot be accounted a disease. It is frequently a family peculiarity.

DROOLING

Can anything be done to stop a child's "drooling"? My boy, now nearly two years old, has drooled constantly since two months old. He had no teeth until he was seven months old, and now has sixteen. He got the bottle until a year old. He is not unnaturally thirsty, but likes something wet in his mouth, and never loses an opportunity to take a wet cloth or sponge. I have spoken about it to two good physicians, but they seem to regard it lightly, and tell me I may be thankful nothing of importance is the matter with him. Let me say that the child is as forward in everything as others of his age. Are such cases of drooling not very unusual?

We may say first, to relieve your anxiety, that the ailment in all probability "is nothing more serious than an annoyance." Quite evidently something has overstimulated the salivary glands, and the child's desire to take wet things into his mouth suggests that he is conscious of an irritation of the gums. Very probably the remaining teeth of the temporary set are in process of eruption, and when this is over the irritation will cease. Another possible cause is this: If there is any obstruction to free breathing through the nostrils, the opening of the mouth may stimulate the flow of saliva. At all events, such cases of constant drooling are not rare.

XVI

THE TEETH

STRENGTHENING THE TEETH

What food is best for strengthening the teeth?

If there is no evident disease of the teeth, the best way to insure continued soundness is not to give any one thing supposed to be strengthening to the teeth, but a good, wholesome diet, and, above all, to avoid the use of those things known to damage the teeth. The articles of food most likely to injure teeth are probably those the digestion of which, either generally or in the particular instance of the person concerned, are found to promote acidity of the stomach. Of course careful attention to the toilet of the mouth is assumed, and the care of a dentist whenever his services may be needed. Actual disease of the teeth can rarely be controlled without his attention. We may add a word concerning the teeth of young children. It is of advantage to keep an infant's teeth clean in the same way as an adult's teeth are so kept. If teeth are already decayed they should be carefully attended to, and the decay hindered by cleanliness after each meal. If teeth are defective in structure, with, for instance, thin or irregularly absent ("worm-eaten") enamel, it is doubtful if anything can be done to strengthen these particular teeth, but coming teeth may be helped by care of the general health, and, as many believe, by the use of the lime salts, particularly the phosphate. The hypophosphite, generally found in the drug-shops in the form of a syrup, seems to be of some

use. The same may be said of the syrup of the lacto-phosphate of lime, and some judicious practitioners still esteem the powder of phosphate of lime, and even the powder of ground bone.

EFFECT OF EARLY FEEDING UPON THE TEETH; THE USE OF THE TOOTH-BRUSH

I have heard as coming from a physician that feeding a baby very early, before the nursing period was ended, had a tendency to injure the material of the coming teeth. What can you tell me about it?

Should a child's first teeth, as soon as they are well matured, be brushed with a tooth-brush or simply washed as the mouth has been washed before?

Any improper feeding before or after the discontinuance of nursing, or even nursing when the milk is impoverished, may lead to rickets and to imperfect teeth as a result. The question is as to the kind of food, rather than the mere fact of feeding.

The tooth-brush will not harm the teeth directly, but it may, especially if stiff, injure the gums and secondarily the teeth. Little children, and especially babies, do not usually like to have their teeth brushed, and struggle against the performance. It is, therefore, difficult to apply the brush as accurately as could be desired. Consequently, to avoid the injury to the gums spoken of, we think the washing preferable.

EARLY DECAY OF TEETH

My baby boy, seventeen months old, has fourteen teeth. The first ones already show signs of decay. What is the cause of this, and can it be arrested? If so, how?

By all odds the commonest cause is faulty nutrition, which may exist whether the child is nursed or fed. If the defects are localized, your dentist can do much to preserve the teeth

by careful attention. If the decay is general, involving the whole surface of the teeth, he can do less or little. But he should by all means be consulted and allowed to judge whether or not the case is one which he can benefit. The expense will be well repaid by the improvement in the child's freedom from toothache and in the better condition of the coming set.

DISCOLORATION OF THE TEETH

My baby is two years and a quarter old. He has been very slow cutting his teeth, the last ones (his stomach teeth) having come through two weeks ago. About two months ago I noticed his four front upper teeth were turning dark; the discoloring now covers more than half the upper part of them. He has always, though very good about everything else, fought against taking a drink of water and having his mouth washed, consequently it has been very imperfectly done. Could that cause the trouble, or does it come from acidity of the stomach, from which he suffered greatly the first year?

If the discoloration is only a superficial one—that is, simply the greenish stain often seen on the teeth—it is probably due to the neglect of cleansing. The fact that the discoloration is on the upper half of the teeth makes this more likely. But we ought to say that the same physical peculiarity that favors late teething also is attended with stomachic disorders and discoloration and early decay of the teeth; so this is a matter to be looked into. The damage to the teeth does not come immediately from the acidity of the stomach, but they are associated manifestations of one cause.

PECULIARITY OF TEETH

My baby, nearly two years old, is perfectly well. Her little tongue is as red and smooth as possible, but she has several small spots, depressions, somewhat discolored, on the face of the front upper two teeth. This peculiarity exists in her father's family, the front teeth of several of the members

being short, strong, and healthy, but not perfectly white, and having these discolored depressions, about the size of a small pin-head. Can anything be done to prevent the second set from appearing the same way? She has had eighteen teeth for six or eight months past.

This peculiarity of the teeth is well known. We recall families where it is found in parents and children, having existed from childhood in the parent. Now, whether the peculiarity is a hereditary one in the strict sense, or whether some nutritional peculiarity that has caused it in two generations is the heredity, or whether it is simply due to some traditional (and in one sense hereditary) method of feeding we cannot determine. We incline to the second supposition. The fact of their existence in the primary teeth does not determine their reappearance in the second set. We know of nothing except general good hygiene that is useful. Keep the child as well as possible, and wait.

REMOVING REDUNDANT OR "EXTRA" TEETH

My little daughter, twenty-three months old, has a redundant incisor tooth which came through three months ago, forcing its way painfully between the two upper incisors on the left side of her face. The back one of these incisors pierced the gum a little higher up and farther back than the corresponding tooth on the right side, thus leaving a space between the left incisors about half the width of a tooth. The redundant incisor cut through this space obliquely, with the edge of the tooth directed to the left and outward instead of downward. It is disfiguring, and will, I fear, crowd the other teeth, and I do not wish it to appear in the permanent set. Will you kindly advise me how soon it should be extracted, also if the operation will be attended with any danger? I have feared the effects of an anesthetic on so young a child, especially as she is of a very nervous organization.

Such a tooth is usually removed by dentists as soon as it crowds the others, or when they think the proper order of

the teeth is deranged by its presence. Whether or not a supernumerary tooth will appear in the permanent set does not depend upon the extraction of the present tooth, but upon the existence or absence of the rudiment of that permanent tooth in the jaw. A dentist of ordinary skill can extract the tooth safely, and will advise you if he needs additional aid in giving the anesthetic, if indeed that is necessary. The simple extraction of an incisor might cause less disturbance than the administration of an anesthetic. If a supernumerary tooth appears in the second set the dentist can also advise concerning its removal.

THE FILLING OF THE FIRST TEETH

Should the first teeth of children be treated just like teeth of adults? That is to say, should a cavity be filled and the tooth preserved as long as possible, even if, in the natural order of things, it could stay only a year or two longer?

The details of treatment should, of course, be left to the judgment of the dentist, but the general rule, we believe, is to continue as far as possible the usefulness of the tooth until it is replaced by its successor. Painful filling can hardly be done to the teeth of little folk, but something in the way of soft filling and the like can be done. This, we think, not only prevents toothache, but enables the child to chew properly, and also gives the second set a better chance of perfection.

UNUSUAL ABSENCE OF UPPER INCISORS

Have you ever heard of a child failing to cut the upper lateral incisors? My little boy, now nearly two years old, has cut all of his teeth except these, which should have been cut a year ago, and the second molars; and I feel very much afraid that the disfiguring little spaces upon each side of the two front teeth will not be filled up.

Yes. Deficiency in the number of teeth, as well as redundance, occurs. Sometimes there is a symmetrical absence of teeth in the first set, while the second set is complete, and sometimes the reverse happens; or both sets may be imperfect or redundant.

XVII

THE EYES

SQUINT

My little boy, two and a half years of age, has from infancy had the bad habit of looking over his head, owing, no doubt, to a slight cast in his eyes. About three months ago I noticed that he turned the left eye in very slightly, and lately it has become much worse. The other eye is slightly affected, too. Our family physician says the eyes may become all right later on, and that, any way, an operation will relieve the trouble; but I don't want to think of such a necessity, as the child has lovely, bright eyes, and I fear they may be injured through the operation. Do you think an operation is necessary in such a case? Is it a very complicated one and frequently done?

Though it is possible that occasionally the squint may be remedied by means short of an operation, yet in most cases the latter procedure becomes necessary. Sometimes, though rarely, the use of proper glasses, which correct the defect of vision, if applied early enough, may cure the squint. The operation usually resorted to is not a very formidable one. If the child is old enough not to be frightened at the sight of instruments, cocaine may be used to abolish pain, and thus the use of ether be obviated. However, in most children the production of unconsciousness by a general anesthetic, such as ether or chloroform, is necessary. The operation consists in severing the muscle the over-action of which causes the squint, or in severing that muscle which, through

the weakness of its opponent, causes deformity. Sometimes the operation is done upon one side, sometimes it is necessary to perform it upon both eyes. The severed muscles then attach themselves, or are attached, further back upon the eyeball, and thus, having diminished leverage, are weaker than they were before, and accordingly allow the eyes to assume the straight position. The healing after the operation is rapid.

It is scarcely necessary to dwell upon the change in the appearance of the child after the operation has produced the straightened condition of the eyes. It is very marked, and sometimes wonderful. So far from your having reason to dread an injurious effect on the eyes, the operation can only improve them. The operation for squint is probably the most frequent of all the operations upon the eye attempted by the oculist; it is also one of the most certain in the results in skilled hands, and hence no excuse exists for allowing a child to go about with the great disfigurement which the existence of squint entails.

TEST FOR CROSS-EYES

There seems to be some defect in the eyes of my boy of five, but I cannot exactly call it a squint. Sometimes he looks decidedly cross-eyed for a minute or so, while most of the time his eyes are quite normal. What is the usual test for detecting cross-eyes?

The test most commonly employed by oculists to detect "cross-eyes" or "squint" is to cover one eye, and have the child look with the other at the examiner's finger, held at a distance of about fifteen inches directly in front of the child in the median line; if this be done, and the hand covering the eye be slightly tilted so that the examiner can watch the covered eye, the latter will be seen to roll, or move inward or outward, according to the nature of the squint. Then, by suddenly removing the hand from the eye previously covered, the difference in the direction of the axes of the two

eyes will be very apparent; the observation must be made quickly, however, since the squinting eye will soon correct its position so that its axis will correspond to that of the other eye, and both will then become fixed upon the examiner's finger. This test should be applied first upon the eye which appears to squint, and then upon the other in a like manner.

It must be remembered that cross-eye, at the commencement of the trouble, is often present only at certain periods and absent at others. Also, that it is frequently due to errors of vision which may be corrected by the fitting of proper glasses.

NEEDLESS ANXIETY ABOUT BRILLIANT EYES

Is there any necessity for worry because a baby has bright eyes? This seems like a very silly question, but I suffered with a complication of nervous troubles before my baby was born, and have been especially sensitive about him. And now an officious friend has "stirred me up"; on first seeing my beautiful, healthy boy, he exclaimed, "What wonderfully bright eyes he has! Has he ever had anything the matter with his head? No? I thought he might have had, as they are so very bright!" Under the circumstances I did not like it, to say the very least.

There is no necessity for worry whatever. Nor, as far as you have given the facts, is there any ground for anxiety. If you have reason to suppose your baby hereditarily excitable, try to avoid excitements for him. Brilliancy of the eye is not an evidence of disease by itself.

EYE-PUPILS OF DIFFERENT SIZES

How serious a trouble is a difference in size of the pupils of the eyes, or how serious may it become? What may be done to correct it or its cause? My boy is six months old, and the difference in his pupils is very marked at times. When the

pupils are small I observe no difference, and for a time have thought the direction or amount of light had the effect named, but now I am convinced the pupils are at fault.

The difference may or may not be a symptom of importance. Associated with other disturbances it often betokens serious brain troubles. On the other hand, cases are met with where the discrepancy has existed from birth and has continued many years in a person of good health, who is unconscious of any disturbance of vision.

STIES

Our little girl of fourteen months has had twelve sties or little boils on her eyelids. They commenced to come about six months ago, a little before I weaned her and just after the first teeth had come through; she now has eight teeth. During the last few months she has grown thin, but of late seems to be "picking up" again. All but two of the sties came on the tips of her lids, both upper and lower, and they have caused her to lose nearly all of her eyelashes. The last two sties seemed more serious than the others. One was almost on the side of her nose, and was opened four times, twice by myself and twice as she hit it with her hand, each time discharging much matter. I have consulted three physicians, but they have not helped her. Can you tell me the cause? How can I help her?

The ordinary causes are local inflammatory irritation, acting upon a system deranged in some way, especially when the patient suffers from anemia (thinness of blood), or is of scrofulous habit.

The general condition must be looked to. The diet should be examined to ascertain if it be well digested. Iron may be needed, or perhaps cod-liver oil. Locally the prompt opening of sties as they occur is very useful, as well as the careful cleansing of the lids. Some of the products of the inflammation may not be discharged as pus, and later on may excite further irritation or remain as an indolent mass in the lids. These are the general principles of treatment. Al-

though you have consulted three physicians, we still think that you will do better to try again than to attempt domestic treatment. Pick out one physician, and continue with him long enough to find out what he can do and to give him some interest in his little patient.

CLIPPING THE EYELASHES

Is it true that clipping the ends of the eyelashes is beneficial, and is it likely to cause them to grow longer? When is the proper time to do it?

Clipping the eyelashes cannot be beneficial in any way, but may be decidedly harmful. The lash is the protector of the eye. Cutting, if it affected them at all, would be likely to make them coarse. There is no proper time to do it.

A "WEEPING" EYE

My little boy of four months has an eye that "weeps"—that is to say, it is almost always full of water, which runs down his cheek and seems to irritate the skin. What is the cause of this? Should it be treated?

The description seems to correspond to an obstruction of the tear-duct. This can be determined only by a physician. If such an obstruction exists a skilful surgeon can remove it, and thereby relieve the trouble.

EYE-STRAIN AS A CAUSE OF HEADACHE

How can one recognize headache due to eye-strain?

Only by a careful examination by a competent oculist can it be determined. But it may be suspected whenever the headache is associated with or follows the use of the eyes, especially on any kind of near work. It is always to be considered when any one suffers from persistent or frequent headaches.

PINK-EYE

How can one tell pink-eye from an ordinary cold in the eye? Is pink-eye contagious?

Both terms being popular rather than scientific, it is not easy to make a scientific distinction. "Cold in the eye" we suppose to mean a conjunctivitis (inflammation of the covering of the "white of eye") which is associated with a "cold," and which may be the main manifestation. As "colds" usually are due to some infection, it is probable that these "colds in the eye" are due to local infection—ordinarily, we believe, to dust or dirt which was infected. "Pink-eye" is really a term of veterinary medicine, meaning a contagious disease of horses in which the inflamed eye is a prominent symptom. Of recent years the name has been applied, jocosely at first, to a similarly prevalent and doubtless contagious disorder in human beings. There is no real distinction as we understand the matter, unless it be the difference of the kind of infection. If the disease is prevalent it is popularly called "pink-eye." If it does not spread it is a "cold in the eye."

GRANULAR EYELIDS

How do granular eyelids differ from ordinarily inflamed eyelids? What is the treatment?

The distinction is not easy to put into popular language. An "ordinarily inflamed eyelid" probably means a catarrhal conjunctivitis, which usually yields readily to skilful treatment (the purulent conjunctivitis is not now meant). Granular conjunctivitis is essentially a tedious and slow-moving disease. It gets its name from a change in the tissues, chiefly inside the lower eyelid, which gives to the surface a granular appearance. Its treatment is not domestic. Usually prolonged medical attention to the eye is necessary.

ASTIGMATISM

How can one recognize that a child is astigmatic, and what can be done for the defect?

The defect called astigmatism in an eye or in a lens is a want of perfect symmetry in its different meridians, so that the rays passing into the eye or lens are not refracted to precisely the same point. Its location and degree are determined by optical apparatus. It may be suspected, at least, by the parent if the child sees differently in different meridians. Thus, if a child sitting at a distance, say across a room, from a clock sees some of the figures clearly and others not, one or both of its eyes are probably astigmatic. Then let the child go nearer to the clock, and observe if the same numbers are clearly seen as before.

The relief is the adjustment of glasses specially ground so that they correct the defect of the eye.

XVIII

THE EARS

EARACHE

Can you give any suggestions as to remedies for earache in children? My little boy of five suffers from it very much, and it always comes on at night. I use sweet-oil and laudanum, warm, dropped in the ear, or soak a piece of cotton and put it in the ear; to this I sometimes have to add a hot poultice of hops, and all this will frequently give no relief for a long time. There does not seem to be any especial cause for these attacks, as our physician has examined him several times.

The occurrence of pain in the ear is a pretty positive sign that this organ is not in perfect condition, or that some part in the immediate neighborhood is diseased; thus, besides disease of the ear itself, such pain may be due to the impaction of wax in the ear canal, or to throat or nose trouble. Hence removal of the cause of the pain by the physician would naturally be most advisable. To relieve the attacks of earache, when the cause is unknown, the instillation of hot salt water will be found most efficient. The salt water should be prepared by dissolving a teaspoonful of table salt in one pint of water. This should be used as hot as can be borne by the sufferer, and should be poured into the canal of the ear by a teaspoon and then allowed to run out again by inclining the head; this may be continued for half an hour or an hour until the pain ceases; or the hot salt water may be allowed to flow into the ear from a fountain syringe held not

higher than one foot above the level of the ear. After the application of heat in this way, a large piece of cotton wadding should be placed over the ear and covered by a layer of oiled silk.

PARTIAL DEAFNESS

I wish to get advice in regard to my little boy's partial deafness. Before he was three years old a severe cold would make him hard of hearing, and now, at five years of age, the same trouble exists, and the deafness continues long after all signs of cold have disappeared. He has recently had a bad cold and earache, and he has remained hard of hearing so long that we are anxious lest his trouble should become permanent and past relief. He has never had much earache or any discharge from his ear. Is there danger of its becoming permanent deafness? Can we do anything to prevent this? He has always been a delicate child, having little endurance. His colds always take a croupy turn, and but for constant doctoring would terminate in spasmodic croup.

There is always danger of permanent deafness under such circumstances. Catarrhal troubles are probably the commonest cause of deafness, and they are very active in just such delicate children. The child should certainly be taken to a physician, who, by advice as to his general regimen and by local treatment of his throat and nose, may be able to prevent the advance of deafness.

PROMINENT EARS

My little boy is nine months old, and his ears seem to stand out more and more all the time. When he was younger he was a frail child, and I did not dare to do anything about it; but now that he is rugged can I not correct this feature by tying them back in some way? He has otherwise a handsome face.

It is probable that persistent bandaging might press the ears flat; such treatment is successful in arresting the growth of the feet in certain classes of women in China. But we are

entirely certain that we would not allow any such thing to be done to any child that was under our care. The object to be gained is of trivial importance compared with the persistent discomfort—running over months or years—that must be inflicted upon the child. When an ear projects as the result of an inflammation the case is different, as slight pressure for not a very long while at a time tends to replace the ear in its normal position. We might add, however, that inasmuch as the projecting ears give much distress to you, it might be proper to try one of the caps of tapes sold in the shops for producing pressure on the ears. They do not so closely cover the head as an ordinary cap, and are less objectionable. But even with these we think that evidences of discomfort should be watched for. It is best to use the tape cap only at night, or when the child is by itself. It annoys the child to be made noticeable, and the treatment itself may make him painfully conscious of his ears.

TAMPERING WITH LARGE EARS

"Little pitchers have big ears." Unfortunately for my dear little girl of seven years, hers are large, physically and metaphorically. They stand out like handles. This peculiarity is not hereditary, and I am anxious to correct it. Can you help me with your advice? When I tie ribbons over them to press gently she complains of soreness in a short while. Am I in danger of doing an injury to the internal organ by pressing externally? I am anxious to free her from the misfortune of prominent ears in later life.

We can help you with advice, and it is to let the ears alone. Any pressure you make is far more likely to irritate the ears and thereby increase their want of beauty than to improve their appearance. The ear, for some reason or other, seems to be considered a part of the body that can be trifled with. Very few persons would think of meddling with a nose that was not shapely, or with lips that were ill-looking, but the ear is practised upon in various ways. It is hard to

say why the wearing of rings in the ears should have survived the kindred mutilation of the nose and lips. Time may improve the set of the ears, and, at all events, the arrangement of the hair will improve their appearance far more than anything you can do to them.

HARDENING OF EAR-WAX

What causes wax to harden in the ear, and what is the remedy? My little girl, aged three and one half years, is bothered with wax in both ears.

There are several known causes. The chief are over-formation of the ear-wax and a changed composition of it, due usually to inflammations of the ear. The only preventive we know of is to keep the ear and throat in a healthy condition. The removal of an accumulation is accomplished by mechanical means. Probably, for domestic practice, the safest way is to soften the mass by keeping a little sweet-oil in the ear for a day or two, and then gently syringing out the ear with lukewarm water.

CAUSE AND PREVENTION OF EAR TROUBLE

My little girl of five years has had two gatherings in her ears, both of which I treated, according to the physician's instructions, by gentle syringing of warm water with boracic acid dissolved in it.

Is there any way to prevent these attacks, except by precautions against taking cold? Is there danger of loss of hearing, and, if so, can it in any way be prevented?

These attacks nearly always come from the spread of an inflammatory process (probably bacterial) from the throat. Whatever measures, hygienic or medicinal, prevent throat trouble prevent also ear inflammations.

There is danger of deafness if, as we assume, the trouble is in the middle ear. The treatment of middle-ear trouble

must lie with the physician. Puncture of the ear-drum is often necessary, and is of great value in limiting the mischief threatening.

SIGNIFICANCE OF A RUNNING EAR

Is a running ear always a sign of some chronic trouble?

No, for the running may be only recent and occurring for the first time. But a frequent or a recurring running of the ear is presumptive evidence of a chronic trouble.

XIX

THE HAIR AND SCALP

STRENGTHENING THIN HAIR

I have reason to believe that my little girl, now three and a half months old, has inherited a weak growth of hair. Can I do anything now, or a little later, to strengthen the hair and roots?

It is too soon to be anxious about the child's growth of hair. She may never have an abundant growth, but its present thinness is no evidence to that effect. The greatest variability exists in regard to the time when the hair becomes thick. We have seen children at birth whose hair was so abundant as to need a regular toilet, and who at three months of age looked as if they were wearing wigs. On the other hand, we know adults whose hair is very thick who were practically bald up to two years of age.

Nevertheless, as you are anxious, we may give you some hints as to what to do and what not to do. If the hair had fallen out from an illness or from a disease of the scalp, some medication would be advisable; but in such a case as you describe it certainly is not. What you have to do is to give the scalp the best possible chance to grow the hair. See that the scalp is always clean—that is, free from dandruff, from the flaky deposit often met with (seborrhœa). See also that the head is not heated nor unnecessarily covered. But in giving it this attention do not irritate it. Do not rub it roughly nor use much soap upon it. Wash it gently, dry it gently. Remove any deposit upon it by very gentle friction

with a finger anointed with vaseline or any perfectly bland oil. Use a very soft brush in arranging the hair and avoid combs altogether. Adhere to the same gentle precautions after the child is older, and you will have done, in our judgment, the best that can be done.

WASHING THE SCALP

When a child's scalp seems perfectly healthy and there is a good crop of hair, how frequently should the entire head be washed to insure a continuance of health? Also, with a predisposition to catarrh of the head, is there danger in washing, if the hair is thoroughly rubbed till it feels dry?

Wash the head often enough to secure cleanliness of the scalp, which may be determined by frequent careful examination for dandruff, etc. Instances occur where the "catching cold" seems to be directly dependent on the washing of the head; but as a rule it is safe to wash the head, if the washing is done in a warm room and the hair is thoroughly dried directly afterward.

THE USE OF SOAP ON THE HEAD

My three-months-old baby's head is always white and clean, and I have washed it with soap every morning, using a little vaseline once a week. I notice that for a few days after using the vaseline the scalp is just as clear as his little face, and then the skin begins to look dry. Does the use of soap tend to dry the natural oil of the hair?

For some weeks after birth the "lathering" has a good effect in dislodging the secretion of the scalp, which is then often excessive. After a while it is not necessary to use soap every day in the head-washing, two or three times a week usually being enough; but if any scurf begins to form the daily use of soap can be resumed. First, however, try if vaseline will not remove the scurf, as it is less irritating than some soaps.

TAMPERING WITH THE COLOR OF THE HAIR

I should be greatly obliged if I could get information as to how to make a baby's hair gradually darker. My little boy's eyelashes being very light, I fear his hair will remain about the same.

We have no advice to offer except that you should carefully abstain from all attempts to change the natural color of your child's hair. No attempts on your part will effect anything but damage to the hair. There is a very strong tendency for children's hair to darken after two or three years of age. Most mothers would rejoice in the blonde hair of a baby.

MILK-CRUST

Does milk-crust differ from eczema, and what can be done for it?

Milk-crust is a name applied to the eczema of the scalp and face of young children. Its treatment is rather too difficult for domestic practice. The essentials of the treatment are the regulating of the nutrition of the child (if artificially fed, usually its dietary needs supervision) ; the soaking off of the crusts and keeping the scalp clean; and the application of soothing remedies, usually in the form of ointments.

THE BELIEF THAT LONG HAIR IS WEAKENING

My little girl is just four years old, and has an unusually long and heavy head of hair for her age. She is not a very strong child, and several friends have advised me to cut her hair off, but I dislike the idea very much, as her hair curls in loose ringlets, and it is a great ornament to her. When it is dampened a little and brushed out straight it reaches almost to her waist. If I thought her strength was going to her hair I would not sacrifice her health, but nothing else would induce me to cut it. Will you tell me if you think I should cut it off, or would cutting it partly be of any benefit?

She does not complain of headache, but suffers somewhat from stomach disorder, as her tongue is often quite white, especially in the morning.

The belief that long hair is weakening is very common, but we know of no real ground for it. So far as we have been able to discover, it may, like any excessive growth of body, be weakening if proper nutrition is not kept up, just as we hear the expression, "The child has outgrown its strength." In such cases the indication is not to try to stop the growth, but to spare the child taxing occupations, and see to its nutrition, until the balance is restored. If the growth of hair were really in any case excessive, we should deal with it on that plan. But to cut it off will not help. It does not retard growth. It is thought to stimulate it, rather. There are reasons why we sometimes recommend cutting long hair. Thus: Suppose a child has reached an age of great activity, and is always romping, climbing, etc.; a long wad of hair on the back of the neck acts as a muffler, making the neck perspire; the next moment it is blown aside or falls aside in the child's activity, and the neck is chilled. We do believe that, under these conditions, especially in an active boy, the alternate heating and chilling of the neck and ears does tend to aggravate or cause catarrhal conditions of the nose, throat, and ears. Your own child seems to need judicious care of her stomach from a physician, rather than the barber's attentions.

XX

THE FEET

INCIPIENT CORNS

I have always been very careful about my little girl's shoes, that they should neither pinch nor rub, and she wore moccasins for a long time. She is now three years of age, and on the little toe of each foot there is a decided corn, the size of a pin-head. Is there any way in which I can cure them, so that she need not be troubled with them always?

There must be some mistake. Corns never come unless there is pressure or friction, and nothing can permanently cure a corn so long as the pressure or friction continues. A shoe may be very large and yet produce corns because its shape is not right. We have seen many moccasins of such faulty shape that they could not fail to produce irritation.

First of all, reconsider the question of shoeing. See if the shoe holds neatly to the ankle and hinder part of the foot; see next that there is plenty of room for the toes not only to go in but to expand and play as the foot is moved. Often it is requisite to get shoes two or three sizes too long in order to secure the necessary width. In the fitting of the shoe lies the whole matter.

The relief of an already acquired corn may be accomplished best by first paring, then applying to the surface a solution of salicylic acid, say one part to eight of water, and after a day or two scraping away any part that has been

softened by the application, and repeating this until the corn is removed.

The corn, too, may be protected from friction by means of a plaster with a hole of suitable size in it, the plaster being so applied that the hole falls immediately over the corn. For children's feet these plasters are best made extemporaneously from several layers of the ordinary adhesive plaster to be found at drug-stores.

DISTORTED FEET

What is the remedy as well as prevention for misshapen feet?

Why, if the baby foot is shaped rightly (the toes slightly spread, and the weight apparently evenly divided over the sole of the foot and on the bottom of each toe), when shoes have been worn for a few years, does the shape of the foot change and the ends of the toes turn downward, the joints pointing upward? This is the way the feet of my oldest boy, aged six, and my girl, aged three, have changed, although they have always worn shoes at least one fourth of an inch longer than their feet. I cannot but feel that the trouble is in the width.

Is it lack of sufficient length or width that is to blame for the immense joint, that sometimes inflames, on the inside of the foot?

The remedy lies chiefly in the wearing of the same kind of shoes that would have prevented the distortion in the first instance. But after a certain degree of displacement and rigidity has occurred other management is necessary. The subject is too wide to be treated of in the space at our command.

We are not sure that we understand correctly what is intended. There is a crumpling up of the toes and the thrusting of one under another, due to the shoes being short or too narrow and pointed; this change is a familiar one. But we think you mean a change which is natural and proper, within limits—namely, that the habit of springing upon the toes in walking gives to them, particularly the outer ones, a

slight curve upward, with some enlargement of the bulbous extremity. You can reëxamine the children's feet and see which change you have to deal with. If the toes are crowded together and the imprint of one is left upon another, the shoes have done at least a part of the distorting.

Insufficient length may have some share in distorting the joint. But the deformity is created thus: A shoe, the inner margin of the sole of which turns outward—as is usual in shop-shoes—at the toe-joint, crowds the great toe toward its fellows; pressure is made upon parts of the joint not well prepared for it, then the narrow upper chafes and sets up an inflammatory process, which ultimately results in chronic thickening of the soft parts, and even of the bone. These distortions sometimes are so extreme as to render the cutting out of the joint necessary.

INGROWING NAILS

Can you tell me of some cure for ingrowing toe-nails, and also what is liable to cause them? It cannot be tight shoes in the case of my two-year-old, as I have always been especially careful to have his shoes roomy and comfortable. He seems to suffer from them, and I feel anxious to help him by some simple means, if possible.

The mischief done by shoes is less from small size than from faulty shape. It is, of course, possible that an ingrowing nail may not come from tight shoes, but certainly ninety-nine cases in a hundred are due to the shoe pressing the toes together. The great toe most frequently suffers; it is crowded against its neighbor, the flesh is pushed up and laps over the nail, and the margin of the nail, being crowded toward the center of the toe, turns downward and so grows. Sometimes, however, there is no fault in the nail itself, simply in the crowding up of the flesh, which thus becomes irritated under the pressure. If a foot has never been crowded, the sides of the toes are rounded as at birth, and, like the fingers, remain so through life. Actually, it is rare to see a foot some of the

toes of which have not left their imprint upon their fellows from this lateral pressure. Keep the toe that is in trouble separated from its neighbor by a folded piece of linen put between them—slightly oiled if there is sign of friction against the linen—and the trouble will probably be relieved. If necessary, the down-growing corners of the nails may be raised by the thrusting under of a pledget of soft cotton. In paring the nails do not cut off the corners, but cut the nail square across. These corners should protect the flesh; if cut off the tendency to burrow is increased.

XXI

HYGIENE AND SANITATION

THE OBJECTIONS TO VACCINATION; SUPPOSED FAILURE OF VACCINATION TO PROTECT; THE PROPER AGE FOR VACCINATION

There have recently occurred in our community several cases of small-pox, and the health board has ordered that all school-children be vaccinated, and advises parents of even younger children than those of school age to have them revaccinated. This seems to many of us a very unnecessary and harsh measure, as not a few intelligent persons here and elsewhere are quite skeptical about the value of vaccination, particularly in the case of very young children. Is it not true that children have often been inoculated with scrofula, consumption, and other diseases through the vaccine virus? And how is it that vaccination so often does not "take"? Is not a child of less than two months too young to be vaccinated?

This letter again calls attention to the singular prejudice against vaccination still surviving among otherwise well-informed persons. It is difficult to account for this on any other theory than that the almost complete immunity from small-pox which the civilized world of to-day enjoys has caused it to forget what were the ravages of that plague a hundred years ago. The objections to vaccination have been often urged, and again and again met. An apparent failure of vaccination to protect is invariably due to neglect of secondary operations; and as to the often expressed dread of the introduction of scrofula and consumption into the system through vaccination, there is practically no evidence whatever

in support of the assumption, when proper virus was used. Of course, the virus must be properly chosen and applied by a physician, for in unskilful hands it certainly may work mischief. Good virus well applied is practically always safe. The mischiefs attributed to vaccination are almost always due to something else. Generally speaking, a child is never too young to be vaccinated if there be danger of an exposure to small-pox, and it is better that the operation be performed before the teething period begins. When the child is six weeks old it is time to consider the question seriously, and the vaccination should not be delayed unless the physician sees reason for postponing it.

THE DISADVANTAGE OF POSTPONING VACCINATION

My husband and I both have a horror of vaccination, and, living in the country, have never had it performed. If it *is* to be done, will it be the worse the longer we put it off, and what time of year is best for the operation? Our baby is fourteen months old.

The disadvantage of postponing vaccination (aside from the special risk of infection taken, which is diminished just in proportion as your neighbors live up to their duty in this matter) is chiefly this: The older the child the more active it is, and the more likely to injure and irritate the point of vaccination and to infect it with some other matter (from finger-nails or elsewhere), and so change a perfectly harmless affair into a possibly serious one. As to your "horror," we can say nothing, as sentiments cannot be argued about. But we can say in all seriousness that the arguments against doing things on Friday because it is unlucky are much more convincing than the arguments urged against vaccination. To our mind, neglect of vaccination, unless a child have some illness or other disability, is distinctly wrong. There is no particular time which is preferable to have it done, but as the skin is more likely to be irritated in very hot and very

cold weather, we should perhaps elect the milder seasons; but the time to have it done is when your physician has good fresh virus on hand.

Whether for the reasons given above or some other, it is a fact that young babies are less disturbed by vaccination than older ones.

THE DESIRABILITY OF KEEPING WATER ON THE STOVE

I would like to ask your opinion as to the desirability of keeping a vessel of water on the nursery stove. Formerly I thought it was the proper thing to do, to keep the air moist. Then I was told that the steam was considered objectionable, inducing throat troubles. Which theory is correct?

It is hard to prove anything as regards the effect of a vessel of water or its absence, but our own notion, which we offer for what it is worth, is this: A vessel on a stove hot enough to generate steam is not desirable except as a remedy under certain circumstances, as, for instance, in croup. But if a room is heated in such a way as to make its air too dry, a broad vessel of water standing in the room may give off enough vapor to mitigate this dryness. The vessel may be near the stove, but should not be so placed as to generate a visible steam.

PLANTS IN THE BEDROOM

I wish to ask your advice about having plants in a bedroom. I am so situated that my bedroom must also be my nursery, and I should like to make it as attractive as possible. A bow-window affords plenty of sunshine from seven o'clock A.M. until five o'clock P.M. Is it unhealthy to have plants growing in a bedroom?

Plants are not usually injurious in a room during the daytime. When there is sunlight the plants absorb carbonic acid and appropriate its carbon and set free a certain amount of

oxygen. This process is not harmful, but rather the reverse, to animal life. The only harm that need be considered is that possibly arising from any considerable quantity of damp earth in the room, but this is probably very slight. But with the coming of darkness this process of absorption of carbonic acid ceases, and a certain amount of the gas is given off; just how much, of course, varies with the quantity and kind of plants in your greenery. The effect is in kind, if not in degree, very much the same as that of having another person sleeping in the room. If you can arrange your plants upon a stand with casters that can be rolled out of the room before sundown and brought back in the morning, the plants will probably be harmless; otherwise they are better away.

PROPER AND IMPROPER FILTERS

Will you please tell me what kind of a filter is best to use for filtering water? I have read so much both for and against filters that I had come to the conclusion that there was about as much danger in using the ordinary filter as in giving the water unfiltered, but after reading an article on "Intestinal Worms" I would like to have your opinion on the subject.

If you care to buy one of the well-known "Pasteur" filters, which are rather costly, or a similar one, and will keep it in order, you will have, we think, a safe article. Ordinary filters, we believe, do more harm than good. They strain out coarse dirt, but they are admirable culture places for all the micro-organisms found in water. Our favorite device for cleansing water is to have a number of bags made of stout flannel with strings at their mouths. One of these is tied over the opening of the faucet and the water turned on gently; this strains out coarse (visible) dirt. No bag should be used longer than one day, and if the water is unusually dirty the bags may be changed several times daily. They should be thoroughly boiled before being used again. If there is any reason to suppose that the water is unwholesome, it should be boiled before using. It may be kept in

stoppered bottles or jugs, and if desired for drinking a bottle may be easily cooled in the refrigerator.

SULPHUR FOR DISINFECTION

We have had one mild case of scarlet fever in our family, and our doctor has depended for disinfectants entirely upon fresh air, sunshine, and an open fire. The patient has been isolated in a bare-floored room for four weeks and will be longer, the other children being in perfect health to-day. As to fumigation by sulphur, the doctor says that the "Sulphur Congress" has just decided that the fumes of sulphur have no effect on disease germs. If this is so, why is not this fact proclaimed? Is it because, as our doctor says, "It is better for some people to keep their faith in sulphur, as they cannot be induced to open the windows unless there is a very strong odor to dispose of"?

We are well aware that sulphur fumigations, if poorly carried out, and perhaps as usually done, are useless. But while the debate as to the value of sulphur fumes has gone on, we have not been convinced that, if properly used, they are useless. They must be used with moisture, hence we usually make steam at the same time with the vapor; and they must be made to penetrate every portion of the apartment to be disinfected. It is easy to admit that more powerful disinfectants exist, but the use of most of them is generally not practicable. At the present time formaline lamps of moderate cost and considerable efficiency are sold in drug-shops and similar places. These are efficient. It may be also admitted that one living in a country village may rely more upon air and sunshine than a city dweller, because the former gets more of these natural purifiers, and because he endangers fewer persons by this method of disinfection than would the latter. In this particular disease, moreover, the fact that many escape contagion under all circumstances is helpful to the success of whatever plan of disinfection be adopted.

DISINFECTANTS

Will you tell us of an article or articles to use as antiseptics and deodorants for a cesspool whose funnel-shaped opening is near the house? Dish-water and such slops only are emptied into it, and it discharges into a rapidly flowing creek about thirty feet distant.

One of the cheapest articles is sulphate of iron (copperas), which may be thrown into the cesspool if it contains standing liquid; if not, dissolve the copperas in a pail of water. Common rock-salt used abundantly is useful, and more powerful than either is a mixture of salt and sulphate of zinc—say three parts of the former to four of the latter—dissolved in water and poured into the cesspool.

GROUND AIR FROM EXCAVATIONS; QUININE AS A PREVENTIVE OF FEVER AND AGUE

A serious defect in our drain renders it necessary for us to lay new pipes outside the house. This of course means the turning up of impure earth. Will you suggest some safeguard for children who, while playing outside, are somewhat near the trench? The work may take a week or more. Would you advise quinine to be given during that time?

Chlorinated lime in powder, or a copperas solution, sprinkled over the earth is probably as good as anything. If in a district where fever and ague often appears, the quinine may be given in moderate doses.

TEMPERATURE OF THE NURSERY AND THE BEDROOM

What is the proper temperature of the night and day nurseries?

Day nursery, 65° to 68°, or, at most, 70° F. Some strong children can get on at a lower temperature than 60°, but the figures set are the best average. The night temperature may

be cooler, but not very much, as the child is liable to toss its bed-clothes off.

THE GAS-STOVE IN THE NURSERY

My nursery is over the kitchen, but cannot be heated from it. There is no room above. We rent the house. I put in last autumn a small stove to be open or shut, and burn either wood or coal, but it sent out so much gas and smoke that, it being a warm season, we seldom used it. The afternoons are not cold enough to require a fire in the room, but I must have some way of heating it before the baby comes from her bedroom in the morning. The chief difficulty with the present stove is that the hole into the chimney is rather low, and the draft is not good, especially when the kitchen stove is first lighted.

Could I use a gas-stove, or anything else that would not require connection with that bad chimney? Please tell me what would be the best and, incidentally, the least expensive method of heating this room.

A gas-stove of the ordinary kind is always very objectionable, because the products of combustion are left in the room, and the air is more vitiated by one, even if small, than it would be by the presence of many persons. If you can find any form of good gas-heater with an escape-flue for fumes it might do. The chimney certainly ought to have a separate flue for each room. Your nursery stove, in a properly constructed chimney, ought to draw all the better if the kitchen fire has already warmed the chimney. If you cannot find a stove that will draw properly, we think the best plan would be to carry the pipe of the kitchen stove through the ceiling and into the chimney in the nursery. In a mild climate sufficient heat would probably be given off from the heated stovepipe for the needs of the nursery.

HOW LONG DO DIPHTHERIA GERMS LINGER?

I have been considerably troubled about my duty toward an acquaintance who recently moved into a house near mine, where,

five months ago, there were two bad cases of diphtheria. The children were desperately ill, and one of them, as I heard the physician himself say, was saved by antitoxin only at the last moment.

I believe the house was thoroughly disinfected, but, nevertheless, it was quite a shock to me when I learned that the lady I speak of had moved into the house with her two sweet little children. I try to put myself in her place, and know that I should have been so grateful if some conscientious neighbor had warned me of the possible danger, even if the landlord had not thought it his duty to do so. To speak of it now that she has moved into the house may create unnecessary alarm, and yet, perhaps, it is my duty, after all, to let her know the facts. In any case, as a similar dilemma may arise elsewhere, I shall be glad of your opinion as to whether diphtheria germs may remain active in a house five months after the outbreak of the disease, and how rigorous a disinfection will secure absolute immunity from diphtheria, at least as far as the original cause of the outbreak is concerned.

We cannot answer the question in a way to help you decide your present duty, although we know that the Klebs-Loeffler bacillus remains a long time in the throats of those who have had diphtheria, without known reinfection, and that it is found in the throats of persons apparently well, and who, so far as any one knows, have not had diphtheria; and while we know that the poison may, under favorable circumstances, cling for a very long time to articles which have been about a patient, yet there are so many doubtful points about the "virulence" of these persisting bacilli, so many possibilities of reinfection, that it is impossible to know the truth with exactness. But given a house which had been "thoroughly disinfected," and which had for a while stood untenanted, we should think that it was very probably as safe as most houses. And in this case whatever harm is likely to follow is already done. Nevertheless, we do feel that the owner of the house ought in fairness to tell the renter of the circumstances.

DANGER OF TYPHOID FEVER TO BABIES FROM IMPURE DRINKING-WATER

Are young babies ever exposed to the danger of contracting typhoid fever from impure drinking-water?

The young baby, perhaps, is least exposed to danger from impure drinking-water because it uses little of it. If it is on the breast it drinks little but breast milk; if it is artificially fed, the milk and the water it uses are commonly raised to or near to the boiling-point in the course of preparation. This fact, probably, is one of the reasons why typhoid fever is so much less common in children under one year than in later childhood.

SUSCEPTIBILITY TO SECOND ATTACKS OF DISEASE

I have been told that a baby having a contagious disease while nursing will be liable to take it again. My little girl had the measles when ten months old. Do you think she would take it again if exposed?

There is no such rule. Children under six months are not very susceptible to measles or scarlet fever, and those under four months have very nearly an immunity from the latter disease. But a great many children have these diseases in the second half of the first year. It is true, also, that a good many persons have them, especially scarlatina, more than once. All any one would be justified in saying is this: If a child has measles under six months of age it is likely—other things being equal—that it is unusually susceptible. Such a child is, of course, more liable to second infection than another. In your child's case there is no ground for unusual anxiety.

PHYSICAL EXERCISE FOR GIRLS

What physical exercises are best adapted for girls as distinguished from boys? More particularly, ought girls from five

to seven years of age to walk, run, and jump as much as boys of the same age?

Girls from five to seven years of age may practically have the same exercises as boys of the same age, with, perhaps, only a little reserve as to heavy exercise (in proportion to age), because even at this early age the boy usually shows something of the superior muscular strength that is so marked in adult life. But they may walk, run, and jump like boys if they are not unusually excitable girls.

DISINFECTING PAPER MONEY FROM A SICK-ROOM

Is there any way of disinfecting paper money kept in a room where there was a patient seriously ill with diphtheria?

You can disinfect paper money without damaging it by either of two easy methods: Pour a little alcohol on a piece of sulphur and burn them on a brick or flat stone, laying the bill near them, and covering all with an inverted stone jar so as to secure the fumes; or soak the bill in a two-per-cent. solution of carbolic acid and water. If one has a formaline lamp its fumes are best of all.

BABY POWDER

What kind of starch or chalk do you consider innocuous when used as baby powder for the customary purposes of drying the skin?

Buy the best starch and pound it into powder, sifting it through coarse Swiss muslin or cheese-cloth. Perfume it with orris-root, and you have a harmless "baby powder." Avoid the chalk as a toilet article. It has some value in certain conditions of irritated skin, but should not be used habitually.

THE VALUE OF WATER IN RHEUMATISM

Please give me your opinion of the value of distilled water for children who have evidently inherited a tendency to rheumatism. Will its continued use eradicate the rheumatic poison from the blood? Would a child given distilled water suffer from the lack of the salts contained in natural water? Is distilled water hurtful in any way? The child is four years old, and has had occasional rheumatic pains, but the general health is fairly good. She has subsisted mainly on cow's milk, and never had an acute attack of rheumatism.

We believe that water, distilled or otherwise, is very beneficial for those who have the rheumatic peculiarity. We do not know that distilled water is any better than a pure, fairly soft drinking-water. We do not, however, think the distilled water hurtful. But we do not suppose that water will remove the tendency, which is usually an inheritance, while it will help to relieve attacks or even chronic pains.

THE TREATMENT OF NERVOUS CHILDREN

My youngest child, nearly a year old, seems to inherit from his parents the nervousness which, to a greater or less extent, all our children—six in number—manifest. I confess I am discouraged, for, in spite of my most earnest endeavors to keep baby quiet, he is restless, especially at night. In most essential respects he is well—in fact, he is pronounced by many mothers of my acquaintance an unusually fine and well-developed child. His food appears to agree with him, and he has been quite a lively toddler since he was ten months old. Still, I am troubled by his tossings and his evidently vivid dreams at night; and, if possible, would like to save him from at least the graver form of nervousness (St. Vitus's dance) which has overtaken one of his older brothers.

Do you think nervousness is inherited? And how ought nervous children to be treated?

Are such children generally more brilliant than other children of their age?

Are vivid dreams always a sign of mental fatigue?

Nervousness is considered by most competent authorities on the subject to be more apt to be inherited than almost any other infirmity, and the children of parents who are of a nervous disposition are therefore doubly exposed to those influences which produce nervousness. As the imitative faculty is very strong in children, such parents should be careful to suppress any eccentricities of gesture and temper that they themselves may indulge in, lest the children acquire them in an exaggerated form. In dealing with nervous children excessive tenderness and sentimentality are as injurious as excessive harshness.

Nervous children are very apt to appear endowed with brilliant talents at an early age, and the parents in their not unnatural pride often encourage this brilliancy, instead of restraining it and allowing the brain to take a normal course of development that will not lead to premature exhaustion or collapse. In other cases, almost as frequent, nervous children appear to be endowed with less than normal mental gifts, and in these cases it is quite as injurious to force and urge them on in the vain struggle to overtake their more gifted companions. The victims of such a mistaken policy often become confirmed invalids in after-life.

Vivid dreams, especially when they are of a disagreeable nature (as most vivid dreams are), are quite as fatiguing as real experiences. Consequently the brain gets no rest, or but little, during a sleep disturbed by such dreams. Avoid everything that may excite the child during the day, and especially near bedtime. For the same reasons—speaking of older children—nothing can be more reprehensible than the habit of allowing them to sit up late, or of taking them to entertainments in the evening. Quiet sleep, fresh air, and, in certain cases, judicious use of cold baths, are the best medicines for nervousness in children within the range of domestic practice. It is worth remembering that overfeeding, especially late in the day, may disturb sleep. Sometimes one bottle less in the day is the needed change.

THE HARDENING THEORY

I should like to ask you a question about our fourteen-months-old baby daughter. She is doing very well in every way, and is considered by all who see her a strong and well-developed child. She is, however, subject to colds. My husband is a believer in the hardening theory, and thinks that it would be well for her to get a cold bath every day, summer and winter, even when she seems to have a running cold. I should like your opinion on that subject before cooler weather sets in. She enjoys the cold bath very much at present.

To begin with, we have no opinion of the "hardening" theory except that, as generally interpreted, it is a great stupidity. We do not of course mean to advocate foolish coddling. The "hardening" method in any shape should not be begun on a little child. As to the cold baths, we note that you do not mention the kind of bath, but we presume that you mean an immersion bath. "Cold" bath is used very vaguely in common conversation, but to a medical man it means a bath between 50° F. and 70° F. Now, a bath drawn from the cold tap in New York City, in the middle of a warm July day, is about 70° (if there has been a prolonged "hot spell" it will mark something higher). This even gives a distinct chill when one enters it, which is soon lost to a strong adult; but the baby's surface area is much greater in proportion to its mass than the adult's, and it is in the same proportion more easily chilled. Suppose baby weighed twenty pounds, and his father one hundred and sixty: baby's mass to the father's is 1:8; his surface is 1:4, and he chills twice as fast, making no allowance for the relatively greater impressionability of the child's nervous system, which still further exaggerates the disparity. As the temperature of the bath is lowered, the depression is proportionately greater. In fever the cold bath, used with discretion, and by those who know its effects, is a valuable remedy, but it is potent for mischief if used stupidly.

As to "hardening," once more we would say that we do

not think well of cold baths, in the usual sense, for an infant or a little child. If the immersions are only for a few seconds they may do no harm, but in our opinion, in cool weather at least, a better bath for the purpose is this: Stand the child in lukewarm water no more than ankle deep, and sponge it over with water of about 70° F. from a bowl at hand. Any necessary washing with lukewarm water and soap to cleanse soiled parts of the person is to be previously done. By this method all the advantages of the cold bath are gained, without its drawbacks.

HARDENING IN PRACTICE

I have two boys, aged three years and eight months and five years and four months, who have from about the fourth month of their lives been accustomed to a daily cold bath. In summer I use for them the water as it comes from the faucet, in winter I raise the temperature to 70° for the younger boy and to 60° for the older. They not only enjoy their daily bath, never experiencing a chill, but often—even in winter—beg for "more cold," and consider it a treat when the cold water is turned on and they are allowed to put their head and neck under the faucet.

Now for the practical side of it. Neither boy has ever been seriously ill, the older has had only a slight attack of the measles, and both are remarkably free from even ordinary colds. Must I look for dire results in the future, as a consequence of my hardening theory and practice?

No. You are not to "look for dire results." It happens that you have a pair of children who can stand the regimen, and we know a good number of such; but we know a great many more who cannot. The same argument which is adduced for "hardening" is also used for violation of every rule of diet. "See my child!" exclaims the proud parent. "Ever since he was off the bottle he has eaten whatever was on the table. Does he not look well?" This is the rule of life in a large class of the community, where a high infant

or child mortality is looked on as normal. But in advising our readers we advise what we believe (and in this we find we agree with the almost unanimous opinion of those who study the hygiene of childhood) is best for the great majority. Wherever a child shows greater vitality than is usual, or less susceptibility to morbific influences, there is no need for him to be as carefully kept as others.

RATIONAL AND INJURIOUS SCHOOL-WORK; THE SCHOOL LUNCH

Is it injurious for young children to do their lessons in the evening? How many hours ought a child of eight to spend in such work? How can one tell whether a child is overworked? What is a proper school lunch?

If by "young children" is meant those under ten, they have no evening. They should be in bed at 8 P.M. The little interval between their evening meal and bedtime should be spent quietly preparing for a restful night.

The school day of a child of eight does not exceed five hours in the public schools, in private schools usually less. This includes study, recitations, and everything. Outside study is not expected, and rightly. The writer believes that nearly all the symptoms of overwork in school are due to other causes and occur about the same whether the child attends school or not. They coincide with the developmental age. If there appear any signs of ill health it is proper to consider the cause, but not to assume over-study until every sort of mal-hygiene has been considered. We have known a child removed from school, by medical advice, as overtaxed, when the physician had been kept in ignorance of the fact that the child had a standing order at the grocer's for a daily supply of indigestibles sufficient to upset a whole nursery. And these instances might be adduced indefinitely. The chances are entirely in favor of a bodily and not a mental cause of the fagged condition of the pupil.

The proper school lunch—still considering young children of eight or thereabouts—is a light one. Plenty of time must be given for breakfast. The midday meal must be ready when the child comes from school. The lunch is only a snack about eleven o'clock—bread and butter, a few biscuits, with an orange or an apple, or a similar "life-saving station" is all that is desirable. If school is arranged so that there is an interval to go home for lunch, then the question solves itself—the lunch is a good warm luncheon. If the hours do not permit the eleven-o'clock snack, and a heavier luncheon must be carried to school, it will depend upon the condition of things at home just what it shall be. But it must be simple; it must be nutritious and digestible —good bread and butter, either alone or in the form of a sandwich made with a thin slice of tender meat or mince. No pie or cake; fruit should be used in its place. Try to make the child's luncheon look tasteful and inviting, and teach him to make it so himself, if practicable. Have a lunch-basket, if possible; not one of those close tin lunch-boxes, without ventilation, which gives to the best luncheon an unpleasant odor. All these niceties promote appetite and digestion. Details as to luncheon cannot be given. The conditions of a town child whose home is only five squares from the school are not the same as those of the country child, who has to make a long journey to the school-house.

OVER-STUDY AS A CAUSE OF CHOREA

My little girl of ten shows symptoms of St. Vitus's dance. Should she be taken out of school? And is it likely that excessive study is the cause of the trouble?

School life has been charged with a considerable influence in the production of chorea. There is no doubt that a choreic child should be relieved from enforced use of its eyes and from the often inconsiderate society of its schoolmates, but that school life or study is very often the main factor in the

cause of the disease we must doubt. Its greatest frequency coincides with the developmental age—six to fifteen—and we believe that it is as likely to occur in children out of school as in. The frequency with which the disease appears in spring has been thought to depend upon the fatigue of the preceding winter's school work. We believe that it should be charged rather to the defective hygiene of the winter, and very probably to the enforced abstinence from fresh, especially green, vegetable food through the cold months.

XXII

QUESTIONS OF DRESS

THE KNITTED BAND; GETTING RID OF THE PINNING-BLANKET

Can you tell me how large to make the knitted bands for an infant? I have but one child, and, as he was dressed the old-style way with many bands, I thought that I could do much better with the Gertrude suit.

I would also like to ask how they do with the pinning-blanket —make it like a skirt or leave it off altogether? I suppose that you will tell me to let the band go after the first month or so, but my boy, now eight years old, had severe trouble with his bowels, and if I took off the flannel band he would be much worse. I also used the band to button the stocking-supporters on, using the supporters as soon as he was put in short clothes. He wore long woolen stockings, keeping his knees and legs warm.

A knitted band should be rather loose; one that is tight enough to hold up stockings is too tight. Its only use being for warmth, it should be wide enough to cover the whole abdomen, say from just below the breast to the hips.

One of the merits of the Gertrude suit is that it gets rid of the pinning-blanket.

SEASONABLE DRESS FOR A FIVE-MONTHS-OLD; SILK OR FLANNEL?

My baby is five months old, and has always worn long-sleeved and high-necked silk shirts, but I find that his arms and shoulders are generally cold. Shall I put flannel on him instead?

What should be the day garments for spring? When summer comes should I make any difference?

Silk is cold wear for winter, and, when damp with perspiration in summer, clings disagreeably to the skin, besides becoming almost as impervious as oiled silk to air and moisture, and thus hindering the action of the pores. Fine silk-warp flannel is better wear for all seasons, certainly for warm weather. Lighten his upper garments, should he suffer from heat, and exchange the damp for dry flannel.

Garments for spring should be the same as for winter, but of lighter material. Substitute short-sleeved and low-necked shirts for those he now wears when the heats of summer begin. Be careful not to leave off the flannel skirt and band too early in the season. Wait for July days for this.

NIGHT COVERINGS

What shall I do to keep my baby boy warm at night? Whatever I do, he *will* get outside the bed-clothes. I fear that by doing so in winter weather he will get pneumonia. He has recently had a severe cold, taken in that way. A few weeks ago I put flannel night drawers, with feet, on him, and consider them a very good article, but that is not enough covering. I have thought somewhat of making a large flannel bag to put him into, and yet that does not seem exactly a comfortable thing.

Besides the sleeping-drawers we are in the habit of advising one of two things: The careful securing of the covers by tapes or strong safety-pins—large sizes are made for the purpose—or the blanket bag you suggest. The latter, you probably know, is the plan pursued by explorers and hunters in cold weather. As a baby's napkins must be changed at night, the bottom of the bag may have a flap to button over, in which case it is really only a nightgown closed at the bottom. It should be made very wide to permit free movement of the limbs.

THE NIGHTCAP; STOCKINGS AT NIGHT

Should a baby with little or no hair, inclined to perspire about the head and neck, wear a nightcap? Should he wear stockings at night? Can any rule be given as to the amount of bundling and wrapping a young baby requires?

We know of no use for nightcaps. The child can be better protected from draft in other ways. The stockings are not necessary if the bed-clothes are suitable and kept in place. The only rule is evenness of protection and sufficient warmth without burdensome weight.

SUMMER DRESS

I should like to ask you how I shall dress my baby boy of eight months in the summer so that he may be warm enough and not too warm; he seems to feel the heat very much. Would a Canton flannel nightgown that has been worn in winter be too warm? Ought he to wear merino stockings, as he is doing now, or will cotton ones be better?

A loose and ample garment, with shirt, napkins, and stockings under it, will be enough in hot weather. Cotton stockings have no particular advantage as to coolness over merino if the former are sufficiently stout to be of any use to a strong baby; so we think that, all things considered, you will find the advantages on the side of the merino. The Canton flannel will not be too warm, but woolen flannel is more porous and generally more comfortable. If night-drawers closed at the feet are used, no other cover is needed in very hot weather.

SUMMER NIGHT-CLOTHING

Will you advise me what material for night-clothes you would consider best suited this summer to the needs of an eighteen-months' child, who will pass the season at the seashore and has still the stomach teeth to cut?

A light, fine, cotton-and-wool flannel makes the best summer night-garments. With proper washing it does not full, and it is in every way safer than muslin for the seashore, and but little warmer.

CLOTHING FOR WINTER

What is the wisest way to dress a child in winter? I do not approve of the little thin white dresses, and want my little girl to wear fleeced piqué.

The garments should be planned so as to make an even covering for the whole body, and should be such as to seem comfortably warm to you for your house and climate, without overloading the child. All babies and children in our winter should have thick woolen undergarments. The heaviest all-wool merinos that you can find of children's sizes will not be too warm. They should be high-necked and long-sleeved, and long in the body. Long woolen stockings, held up by side supporters, are an excellent protection, and, if possible, let the child wear flannel drawers also, for the skirts fly about and cannot be depended upon. The legs of the drawers can be made separate to button on, if more convenient. Then comes the cotton waist, which helps to protect the chest and holds the flannel skirt and drawers. The fleeced piqué would be comfortable, but, with an extra flannel skirt and flannel sack underneath, the thin dresses can be made perfectly safe. A few house sacks are useful when the rooms happen to be cooler than usual, but should not be habitually worn.

For out of doors have a thick hood, or a hat which will cover as much of the head as a hood, with warm, broad ear-pieces, fitting closely, and a heavy cloak. If the child walks she should have thick soles and leggings. If she rides she should have plenty of blankets snugly tucked around her under those used chiefly for ornament. Warm mittens are very important, and care should be taken that they are kept

on if the weather is cold, for the child cannot be comfortable if the hands are chilled.

THE VALUE OF LONG STOCKINGS

I should like to put my baby in short clothes in June, and wish to ask what kind of socks I should put on him? One friend says cotton, another says merino by all means through the first summer. If the latter advice be followed, will there not be danger in changing to cotton ones later; or would this necessitate putting on cashmere ones as the cold weather approaches?

My oldest child wore merino and then cashmere stockings, but is subject to spasmodic croup. Is there any truth in the statement that woolen stockings cause a tendency to croup by making the feet perspire? If this be true, I want to guard against the second child being made a subject for croup.

When the baby is put in short clothes he should have stockings long enough to cover the leg and knee and even higher if the napkins will permit. The short sock commonly used on babies has no value except to keep the shoe from touching the foot; it generally leaves the calf and knee bare if the child moves his legs enough to throw off his skirts. We are persuaded that the secret of healthful clothing is the uniform protection of the body; hence a method of dress that leaves open patches of the person between thickly clothed ones is more hazardous than simple nudity. A child should not be burdened with clothes, but the protection should be as evenly distributed as possible; hence the advice about the length of the stockings.

As to materials, we prefer those that have a considerable amount of wool. "Merino" is a trade name for knitted goods containing both cotton and wool, apparently in varying proportions. "Cashmere" we are not quite certain about, but we think it is mainly wool with some cotton. The reason for preferring wool is that through it changes of heat and cold are less quickly felt. It has been found that light

woolen fabrics make the most comfortable as well as the safest summer apparel.

We do not believe that croup comes from the cause assigned. If the shoe is sufficiently large the woolen stocking does not cause perspiration, and, as already said, a change of temperature or a draft of air, which are the usual causes of a checking of perspiration, are much less readily felt through wool than through cotton.

STIFF SOLES FOR BABIES

At what age should a child wear stiff-soled shoes? Our baby has worn kid shoes, with soft soles, since he was seven months old. He is now one year, but has never shown any inclination to walk or creep. He is large for his age, strong, and healthy. Will a stiff sole injure the shape of the foot?

The stiff sole is not necessary until he begins to walk out of doors; it then is useful to prevent bruising of the foot. The stiffness of the sole, if the shape is right, will not change the shape of the foot; but, unfortunately, the shape of baby shoes is not always right, although they are usually less atrocious than the soles made for adults.

GARTERS AND STOCKING-SUPPORTERS

What do you consider best for children, the round garters, above the knee, or the stocking-supporters attached to the waist?

The objection to the circular garter worn above or below the knee is, of course, that if tight it interferes with the free return of blood from the leg. The objection to the waist stocking-supporter is that if tight it draws forward too much on the loins. Now, practically, neither does harm if not too tight. If one tries to keep a silk stocking up next the skin or upon slippery underclothing, a tight garter of either kind is needed to keep the stocking free from folds. But

as children dressed for comfort and not for show generally have in cool weather drawers of woolen or some knit goods and stockings of wool or some substantial material, the stocking is readily kept in place with very slight pressure. Very little, for instance, is required to keep the stocking of the bicyclist or sportsman in place. In our judgment, the stocking-supporter is preferable if the garter must be tight, but if the child is properly dressed it makes little difference. You should yourself see about the snugness of fit.

In the case of the Gertrude suit, if you prefer the supporter, you can put supporting buttons upon the inner garment of the suit.

PROPER STOCKINGS AND SHOES FOR A DEPRESSED TOE

When my three-year-old boy was born, we noticed that the toe next the big one on the left foot was inclined to turn under the next one. He wore chamois moccasins till a year and a half old, and then broad-toed shoes; but I find the toe is not getting any better; the big toe seems to push over and almost meets the third toe, leaving the second quite underneath. It does not seem to give him any pain now, but I fear will do so later—the nail seems to pass almost through the flesh.

Is there anything I can do for it? We thought perhaps stockings with separate toes might be an advantage, but do not know if they are made for children—can you tell me?

Also, can you tell me where to get shoes without any heels? He is wearing the largest size of infant's shoes, and the next size has spring heels. I cannot see why, if shoes with no heels are best for *little* children, they are not always best; and then they all have such thin soles. I have used cork soles in my boy's shoes all winter.

The toe may have had, and probably did have, some congenital peculiarity. The management of such toes often requires considerable ingenuity. The intruding, overlapping toe must be kept in place. Various devices have been used,

and which particular one is best adapted to this case we cannot tell by description. Often, too, after the depressed toe has occupied such a position for a time, it will be necessary to raise it by a strip of adhesive plaster or in some other way. You can do a good deal, but you will work best if you have the advice of some good physician of your neighborhood. Get that one who has the most surgical or mechanical "knack." The stockings with separate toes are usually knit to order, we think.

The "spring heel," meaning only a thickening of the sole at the back, is harmless. The essential reason, we apprehend, why no heels are used for any young children is to allow them as free movements of their feet as possible until they get control of them. They stumble and fall very readily at best. Any stiff sole would aggravate this tendency; later, they can manage a stiffer sole, and the spring heel is only a slight additional protection to the sole of the foot. The thinness of the sole need not be prolonged after children have good use of their limbs, but you must not expect the shoemaker to make innovations unless loudly demanded. Shoes are made to sell, and the shoemaker is a merchant, not a physiologist, nor usually a philanthropist.

THE ADVISABILITY OF GOING BAREFOOT

What is your opinion of letting infants and children go barefoot? In a climate like that of Texas, where, as some one said, it is nine months summer and three months very late spring, children seem to do this with impunity. I hesitate, however, and would like to know your opinion as to the advisability of getting near to Mother Earth.

The climate of Texas we know only by hearsay. The feet, if exposed persistently, become hardened on the sole and less sensitive than if covered. Apparently, country boys suffer but little from the exposure to cold. In an equable, warm climate it is probable that there would be less risk than in colder or more variable ones. One of the objections to going

barefoot is the susceptibility to injury. Any one who went barefoot in his childhood will recall the painful "stone bruises," often suppurating, from which he suffered. If the plan of going without shoes is adopted, it should be commenced after the summer has really begun. It is easier and safer to continue as the weather grows colder than to begin too early.

XXIII

CARE OF THE MOTHER

NERVOUSNESS IN THE MOTHER AS A CAUSE OF BABY'S COLIC

My second baby was from birth very troublesome. He was uneasy and fussed and cried the greater part of the day, and invariably had a spell of colic in the evening, after which he would settle for the night. This continued for five months, when the colic spells became less frequent, but the restlessness and lack of regular habits, except in nursing, continued until he was weaned at ten months, at which time he weighed twenty-five pounds nude.

Every effort was made to find the cause, and many remedies were used to cure the colic, which was severe. My diet was given special attention. I systematically eliminated one article of food after another which I thought might cause the trouble.

My third baby was from birth until the nurse left what mothers call "a dear, good baby," but after I began to care for her she gradually developed the same symptoms as baby number two, but with less severe colic. Again I looked to my diet, with the same result as before. I was in despair.

I consulted my physician, as I had with my former baby, but this time he prescribed for *me*—harmless sedative tablets for nervousness. The effect was immediate. Baby resumed her happy existence, and now, at five months, eats and sleeps well and regularly in spite of the fact that I eat everything I desire. Even such articles as baked beans, boiled onions, or turnips (which I began to eat with fear and trembling) do not disturb her in the least.

I firmly believe, as does my physician, that if the same treatment had been followed with baby number two he would have been spared much misery and the whole household much worry.

The question of the effect of the mother's emotions or nervous state is an old one. The books give cases of very great damage done to infants by nursing after the mother had undergone strong emotions, notably anger. It may be said that these cases are not recent and have not the preciseness in detail that modern science demands. Yet we think that there is no doubt that nervous disturbances on the mother's part do cause symptoms of indigestion in the infant. Just what changes occur in the milk is not known. Opportunities are usually too rare to enable the chemist to make the delicate analyses which might show the nature of the changes, and it is very probable that the latter would be beyond our present means of detection. If, however, we reflect that emotions will affect all of the secretions—perspiration and urine, for instance—will change the action of the bowels, will cause nausea and vomiting, the fact that the milk should be similarly modified does not seem remarkable.

In practice it is well to consider two things in the mother's condition: First, her general condition of health as modifying her nervous state, and individual occasions of nervous excitement or irritation. A general nervous condition will be likely to give rise to pretty steady disturbance on the part of the child, and this condition can be best treated as it was in the case of our correspondent. When some single source or occasion of nervous excitement in the mother has once produced trouble in the child, it will be well to be on guard if such excitement occurs again. One of the best remedies in common use is asafetida. Its odor is disagreeable, but its value as a soother of disturbed nerves is established. Fortunately, it has the additional advantage of being a notable remedy for colic in infants. A still further advantage is that it is not poisonous, and is laxative rather than constipating.

When, however, the question of a child's colic being due to the mother's nerves comes up, in every case all other causes should be considered also. Thus, it may be difficult to show —as in our correspondent's case—that her food affected the baby. In fact, we believe that, as a rule, if the mother's food be well digested by herself it is not likely to hurt the baby. But in this very case we note that the child at ten months weighed twenty-five pounds nude—a very heavy weight—which makes one wonder if the colic may not have been partly due to overfeeding. Fussiness with rapid growth is very suggestive in this condition. Probably it explains many of the common cases of colic which torment the baby and its mother for three months and then cease. The milk-supply was beyond the digestive power of the young baby, but it eventually caught up with it.

A SENSITIVE BREAST

My baby is seven and a half months old, weighs seventeen pounds, and has two teeth started. She has never been sick, but has always been constipated, having only one movement a day after an injection of glycerin and water (one half teaspoon). I nurse her, and occasionally I feel a pricking sensation in my nipple, after which baby draws blood with the milk, resulting in a black movement. It does not seem to affect her otherwise, but I know something must be wrong, and ask your advice.

It is probable that the pricking sensation followed by blood is from a slight wound, whether from a bite or from too prolonged or too hard sucking we do not know. If it seems to be from the latter cause, perhaps it could be avoided by changing to the other breast before the sensation is felt. If it occurs only on one side, better let the baby feed first from the other side, so that she shall not pull so hard on the tender side. A shield may prevent this trouble. If it fails, weaning is the cure, and it may be begun early if the breast is often hurt—that is, often enough to keep it sore.

SORE NIPPLES

My baby is bottle-fed because of the suffering caused by sore nipples and two gathered breasts, the milk having been so transformed by my nervous terror from the pain that it nearly killed her. Do you know or can you safely recommend a cure for sore nipples?

"Sure cures" rarely exist out of the realm of popular medicine. We have none to offer. But careful attention to the following details generally insures immunity or speedy cure. The usual causes of sore nipples are two. First, want of development of the nipple, which makes it difficult for the child to nurse without violent sucking; a similar condition results from flattening of the nipple from pressure by a corset for years, the nipple becoming broad, but not prominent enough for the lips to grasp it. The second cause is want of cleanliness—not want of ordinary cleanliness, but of absolute cleanliness, or, as the medical phrase is, "surgical cleanliness." It may be said at the start that some persons —particularly persons subject to eczema—seem to have a greater tendency than others to these nipple troubles.

When the nipple is not well developed or is flattened, much may be done during the later months of pregnancy to elongate it by gently but persistently drawing it out and at the same time pressing backward the darkened skin (areola) around it. If at the same time the surface of the nipple seems to be tender, it can often be hardened by frequent bathing with alcohol or with some astringent solution, such as alum-water, alcohol and alum, witch-hazel extract, and the like. Occasionally a person is found whose skin does not tolerate these applications, but in the great majority of cases they agree and are beneficial. But no preliminary preparation will be effectual if the details of toilet of the nipple, presently to be spoken of, are not heeded.

Sore nipples are of two kinds, those that are tender or excoriated ("raw") and those that are fissured or cracked.

The prevention and much of the curative treatment are the same for both. The former are usually made tender first of all by the oozing of the watery liquid that precedes the milk. This, with the moisture of baby's mouth and a little milk (when it has come) left after nursing, if not removed with the utmost care, will remain in the minute folds of the nipple skin and soon set up an irritation. At first, to the naked eye, or even with a magnifying-glass, nothing is evident but a redness of the surface; but this spot is exquisitely tender, and many women who have bravely borne the suffering of labor shrink from the putting of the baby to the breast. This, if not promptly attended to, becomes a raw surface, and even more tormenting than before.

Now, from the start the nipple should be kept scrupulously clean. It should be bathed before suckling and after it. Some mild and unirritating disinfectant should be used —boracic acid is our own preference—dissolved in the warm water employed for bathing the nipple. It will be worth while to examine the nipple, and particularly its base, for wrinkles and folds of the skin, because in these the fermenting liquids hide and set up the irritation. If such folds be found, they may be washed out by the aid of a camel's-hair pencil or a little wad of absorbent cotton. The parts should then be carefully dried, unless the attendant thinks it better to keep some soothing wash always on the nipple in the intervals of nursing. One authority advises the use of Goulard's extract—a teaspoonful to a tumbler of water—to be kept for several days on the nipple by means of a soft cloth, washing it carefully away before nursing.

If but one nipple is sensitive the task is easier, for then the child may take the other for a day or two, the tender breast being carefully emptied by stroking and rubbing. Two days' rest of a nipple almost always results in a cure. When, however, both nipples are troublesome, they require more attention, but the rest of both breasts results in a disappearance of the milk altogether.

The treatment of cracked nipples demands the same pre-

cautions as have been detailed. In addition, the fissures themselves often, if not usually, need local treatment; but as this can be well carried out only by the physician or a well-instructed nurse, it is not worth while to enter into it here.

THE DIET OF A NURSING MOTHER

What should a mother eat while nursing her baby, or what especial things should she avoid eating?

No explicit directions can be given. There is a very general belief among mothers that their articles of food may affect the suckling's digestion. There is nothing improbable in this, since we know that some drugs taken by the mother can be recognized in the milk; and certainly in cow's milk the taste of certain things—the turnip, for instance—eaten by the cows is often recognized. In practice, however, women are not harmonious in their opinions as to the kinds of food which do affect the suckling, and some medical men are skeptical as to the whole matter. For ourselves, we think the truth is about as follows: Any good wholesome food which the mother can ordinarily fully and easily digest—*i. e.*, without distress, acidity, flatulence, or other evident disturbance—may be eaten, with perhaps the exception of such articles, chiefly vegetable, as contain a strong volatile oil or principle such as we can recognize by the taste in cow's milk. Such are the cabbage, cauliflower, turnip, onion, and garlic. Now, we are not quite sure that even all of these need in every case be avoided, for they certainly form a considerable part of the diet of nursing women in some walks of life. Whether in those cases they do not usually affect the infant, or whether a certain amount of disturbance of the baby's digestion is in those rather unintelligent circles considered as normal or unavoidable, we do not positively know. We should, however, advise the use of other things in preference; and, in case these vegetables are especially craved or are needed as laxatives, that they be taken cautiously and

the effects noted. There are many articles, notably starchy things—white bread, potatoes, beans, etc.—which some persons digest perfectly and others only with the formation of much gas. Concerning such there is no rule beyond individual experience. It would be a pity to avoid any food that is wholesome to the mother if it is not really disturbing to the child.

We believe that all alcoholic beverages should be used sparingly and with great circumspection, unless ordered by a physician, in which case explicit directions as to the dose and the period during which they are to be used should be asked for.

THE BEST METHOD OF DRYING UP THE MOTHER'S MILK

What is the best method of drying up the mother's milk?

Ordinarily, absolutely nothing is needed but to let the breast alone. If the breast fills, stroke or pump out the milk. Belladonna ointment applied to the breast, however, hastens the disappearance of the milk and eases pain, but do not let the infant get any of the ointment in its mouth or eyes. It is very poisonous.

"NURSING SORE MOUTH"

Can you give a cure for "nursing sore mouth"?

The disease known as "nursing sore mouth" is, fortunately, a rare one nowadays. Some thirty years ago it excited much discussion in medical journals in various parts of this country. It has been known to be epidemic where some bad climatic or hygienic conditions have existed. The disease is probably always dependent upon anemia (thin blood), and it sometimes occurs before delivery, and has even attacked males. Authorities agree that the surest cure lies in tonics, iron, quinine, cod-liver oil, good food, and perhaps

wine. One writer goes so far as to maintain that it is neither more nor less than scurvy. The best preventives are good, generous diet and good hygiene during pregnancy as well as during the nursing period.

EXCESS OF ABDOMINAL FAT

Is there any safe and practical way of removing superfluous fat from the abdomen? The nurses here never bandage after labor. Would that account for it? Immediately after the birth of each of my two children there has seemed to be no adipose tissue there at all. Before I am out of bed, however, it has begun to be deposited all over the surface of the abdomen, and, alas! it continues to come. My general health is good. I take much out-door exercise, and my diet is mainly meat and fruits, as I do not care for sweets or starchy foods of any kind, but the melancholy fact remains—and I fear the trouble will increase—twenty-eight inches waist, forty-eight inches hip! I know this question has nothing whatever to do with the care of babies, but as the trouble seems to have been caused in some indirect way by them, and as the subject will doubtless be of interest to others as well as to myself, I take the liberty of coming to you for help.

The excess of abdominal fat after delivery is not dependent upon the absence of the bandage. We have often seen it occur just the same with the bandage. The peculiarity is in part constitutional. For its relief, diet will do something, kinds of food and amount of liquid both being considered. But during lactation a good deal of liquid may be needed. Further, we believe that systematic muscular exercise of the abdominal wall is useful, in that much of the protuberance of the abdomen is due not to the fat, but to the laxness of the muscles. We have knowledge of instances in which during a course of exercise several inches were lost in girth, while no weight was lost. Even if girth be not reduced, the muscular gain enables one to be more active.

FALLING OUT OF THE HAIR AFTER CONFINEMENT

In behalf of some of my friends, as well as myself, I want to know if you can give me any information regarding the prevention of the falling out of hair after confinement? I have very heavy hair, but after the birth of my little boy, two years ago, I lost fully one fourth of it, and it has not grown in to any length since then. Now, a frequent recurrence of this would be most disheartening. Is there any known treatment of the scalp, either before or after confinement, that could prevent this?

We know of no way of preventing this peculiar fall of the hair, which is of very common occurrence and very similar to that following severe illness, particularly if attended with fever. Fortunately, the hair usually returns as fully as before; but as a very long time—many months, or even some years—is required for it to gain the great length seen on some women, the frequent recurrence of pregnancy might prevent its reaching its original length. Applications to the scalp are useful if there is a recognized disease of the scalp; but in cases where there seemed to be no local disease we have not been able to see that the growth of the hair was more rapid after using the most approved local applications than in those instances in which none were used.

XXIV

SPECIAL REQUIREMENTS AND PERPLEXING POINTS IN THE NURSERY ROUTINE

CRYING AND SEDATIVES

To what extent is crying harmless in babies? The cry of a baby is its voice. If this were stifled it could not make known its discomfort or pain.

Should sedatives be given? When? In what quantities? What is a safe preparation?

When an infant of a few days, say two weeks, sleeps well during the day, but cries at night, how can the natural relation of day to night be restored?

This can be answered only in a general way. The baby has "no language but a cry" in one sense; but it does not "cry for joy." If a baby cries, it signifies that things are not as it wishes in some particular. Of the various cries of infancy many are usually easily recognized, or at least have been catalogued by nurses long ago. Pain, weariness, sleepiness, fright, etc., are among the causes assigned to different cries. To many children the cry is not harmful, but the cause of the cry—pain or fright, for instance—is. We presume our correspondent wishes to know when crying is of itself harmful. It rarely is so. Children occasionally "cry themselves hoarse," and, also rarely, a fit of crying may excite vomiting if the stomach be full; but neither accident is very important. Of more importance are the fatigue and excitement dependent upon excessive crying. Violent fits of cry-

ing are assigned as a cause of rupture (hernia) in infants, and possibly correctly. It is not easy to describe the various cries of infancy. Their interpretation is learned by watching the child. The main point is to make sure, if possible, whether any removable hurt is the cause of the outcry. See if pins are pricking the baby or if it is too tightly diapered or clothed. Try also to see if it has colic or indigestion, and so on.

By "sedatives" we presume is meant not what are called such by physicians, but anodynes (relievers of pain) or hypnotics (sleep-producers). Neither the one nor the other should be given under any circumstances without medical advice, which should be specific as to dose and time and occasion of repetition. There is no safe preparation for infants or young children without such advice.

The process of correcting bad sleeping habits is often very difficult, and taxes the ingenuity of the nurse; but usually the monthly nurse can get the baby well started, and she should, if she has been successful, explain her methods minutely to the mother. The secret of success is not in drugs, but in systematic and regular methods with the baby.

HARD CRYING AS A CAUSE OF RUPTURE

Will hard crying cause a baby to be ruptured?
Have you known of such a case personally?
Is it common?

It is a common popular belief. But we think that hard crying has not this effect without other coöperative causes.

We can recall no case in which the relation of cause and effect was clear. Thus, while rupture may be produced in almost any one, it is most commonly produced in those whose abdominal apertures (the inguinal and femoral rings of the anatomists) are less well protected than in others. Again, while we think that a normally constituted infant would very rarely, if ever, rupture himself by crying if the abdomen

were free, he can easily do so if all the elasticity of the middle part of the belly is destroyed by a tight girdle, as the "band" often is when tightly applied. It becomes then a point of resistance, the pressure of any strain is concentrated upon the bottom of the belly, and rupture is favored.

Rupture is common enough, but, as we have said, we do not think it common from crying.

ROCKING THE BABY

What are the physiological objections to rocking a baby? Is it likely to produce congestion of the brain?

The objections, in the main, are not physiological. We do not believe that gentle rocking is, save in exceptional cases, harmful; but, on the other hand, it is not beneficial. The simple holding of the child, by the support and warmth given, is as quieting. The chief objection to rocking a child is the habit that is formed of going to sleep in an unnatural way. Sleep comes naturally to the tired child as soon as it is free from discomfort and is left alone. In saying the above we do not mean that the jolting or violent oscillation of a child whose stomach is full is harmless; we believe that favors indigestion.

AGE FOR SITTING UP IN THE CHAIR

At what age is it safe for a baby to sit up in its chair?

The age at which a child can sit up varies much, and depends entirely upon its strength. We do not like chairs for very young children, because of their want of even support and their insecurity. A child should be allowed change of position from birth, and change of posture as soon as he can change it himself or shows a desire to change. To this end we like to bolster a baby up, on a bed for instance, with pillows. His head and trunk are then well supported, and the change becomes a pleasure and not a tax.

BABY IN THE CORNER

Do you think it injurious for a baby to sleep in a corner? Our room being very small, it is a case of necessity that baby's crib should be in a corner. We always have one of the windows raised several inches at night for ventilation.

There are corners and corners. If a room is badly ventilated, corners are ordinarily the least ventilated parts. If, on the other hand, the room is one, such as is often seen in poorly constructed country houses, which is the arena of contending drafts, a corner may be the least dangerous part of the room. A small room with a window open ought, we should suppose, to be sufficiently ventilated to render the air in the corners safe. Another aspect of the question is this: If the corner be one between two external walls, it is likely to be chilly, if not damp; an inside corner made by lath-and-plaster partitions would not be open to this objection. As your room is small, it presumably has sufficient light as well as air.

PLAYING ON THE FLOOR

I have two little ones, the elder four years of age and the younger just walking alone. Our house is heated by a furnace, but there always seems to be a cold draft upon the floor, where my children are inclined to spend most of their time with their toys. Can you suggest a plan whereby I can manage to keep them amused off the floor, or is there any way of stopping the drafts?

While heated air rises and cold air falls there must always be a chill current near the floor. Drafts from without may be partially excluded by weather-strips and sand-bags, but baby sitting on the carpet is almost sure to take cold in bitter weather. A cheap mattress, covered with a quilt or shawl, makes a safe place for him on windy days. One mother had a sort of dais or platform, six feet wide and six

inches high, mounted on rollers and set against the wall of the nursery, for "baby's room." In default of these conveniences, give the twain chairs and low tables of their own, and teach them to use them instead of sitting on the carpet.

THE EFFECTS OF "JOSTLING ABOUT"

Will you tell me if you think it injurious to the nervous system of infants under six months of age to be jostled about in baby-carriages, baby-jumpers, etc.?

We do not know that such jostlings are injurious to the "nervous system," as physicians use that name—that is, in its anatomical sense—but we believe they do increase the timidity and excitability of children, or, in other words, make them "nervous," especially if already inclined that way. We do not, for various reasons, think a baby-jumper fit for a child under six months of age; and at any age a child's carriage should be trundled with care and without unnecessary jolting.

RAPID CARRIAGE-DRIVING FOR VERY YOUNG CHILDREN

Is it wise for babies at the age of six weeks or two months to be driven over country roads with fast horses? I mean can the violent exercise cause any injury to so young a child?

Unless the roads are unusually smooth or the vehicle unusually easy such exercise is undesirable. It is comparable to the jolting method of our grandmothers, when a rockerless chair was made to act as if it were a rocking-chair. If a young child is taken in a vehicle, it should be snugly held against the breast if rapid driving is necessary. Under such circumstances it should be protected until it is old enough and strong enough to steady itself.

METHODS OF LIFTING THE BABY

Will you please tell me how a child should be lifted?

A baby can be best lifted from a horizontal position by putting one hand under the neck and shoulders (or shoulders alone after the neck becomes strong) and the other under the hips or seat. And it is always well to support the back when practicable. It often will, however, be necessary to put the hands for a moment under the armpits.

OBJECTIONS TO A VEIL

Do you consider a white veil injurious to a baby's eyes? Is it not better to wear none rather than a white one?

We do not know that a white veil is much different from veils of other colors. We think the texture and pattern of more harm than the color. Except to protect from severe wind or from insects, we do not know why any should be worn at all. The child should not be placed so that the light glares in the eyes.

TEACHING THE USE OF THE NURSERY CHAIR

Who can tell me how I can teach my little girl to ask for her nursery chair? She is nearly two years old, and is a remarkably good child. She does not talk, but understands everything we say to her, and has little ways of her own of asking for everything she wants, except in this one instance.

I spank her and talk seriously to her about it, and the last time she cried so hard and so long that she was completely exhausted and I was really frightened; so I feel that something besides spanking must be done to correct the fault. I have been very careful to put her on the chair regularly, but I cannot depend upon her, and I never know when she is going to disgrace me in the most public places.

Other mothers to whom I have spoken on the subject either say they never have had any trouble in the matter, or else they take it as a matter of course, and say the child will learn when she grows older. I think she is old enough now.

There is no good way but to wait. It may easily—in fact, it constantly does—happen that a child may ask "for everything she wants," meaning every concrete thing, and yet be quite unable to express a want of the sort described. We know many young children who give warning of their need, but not by asking. Their watchful attendants have learned to associate the child's actions or expression with the cause. Again, one child may have ample time between the recognition of the desire for a movement and its fulfilment to give notice. In another child—as in some older persons—there is no such interval. Often we have observed children engaged in play who evidently were in need of attention, but who were so absorbed in what they were doing as to be unconscious of it, until led away by the attendants.

Nothing can be gained by spanking and frightening a child under the circumstances. It probably will make matters worse. If you are obliged to take the child into a public place—which of itself often excites a desire for evacuation of bowels or bladder—and fear an accident, see that the bowels are relieved by enema or suppository before you go.

THE CARE OF FINGER-NAILS

Can you give me some instruction as to the best method of caring for my baby's finger-nails—*i.e.*, how to shape them in cutting, and how to prevent the skin from growing up over them? Of course it is a struggle to get them attended to at all, but I want to do it in the best way, if possible.

In our judgment, the best method is to do nothing which is not necessary. Trim the nails as smoothly and evenly as possible, not too short, but short enough to prevent their breaking. The skin will not grow over them more than it

should. The little film at the root of the nail is not harmful. When the child is older, if the film seems unsightly, it is easily removed.

SUPPOSED ADVANTAGES OF BEING THE "MIDDLE CHILD"

I have just seen the following in a newspaper:

"Mr. George Bancroft accounted for his own longevity with three reasons: First, that he was the middle child in his father's family, equally distant from the youngest and the oldest; second, that he had always gone to bed at ten o'clock, unless it had been impossible; and, third, that he had always spent four hours in each day in the open air, unless prevented by a storm. He added that his riding, of which the newspapers had made so much, was primarily for the purpose of being out of doors, and not of being on horseback."

The early-to-bed feature, as well as the out-door exercise, need not be regarded as new; but this is the first time I have ever heard of any special importance being attached to the "middle child," and would like very much to learn whether there is "anything in it." Coming from any less authority than Mr. Bancroft, I should have set it down as superstition and thought nothing further of it, though for that matter I cannot say that there is evidence that Mr. Bancroft really did say it, as the above quotation was itself quoted from another paper.

We have never heard of the notion before; we believe there is "nothing in it" as it stands. But several facts may have given rise to the belief, if such belief exists. The earlier children of immature parents sometimes show corresponding feebleness of constitution, although youth of the parents, if they are really mature, is usually considered an advantage to the offspring. On the other hand, the later children, if many be born to the parents, not infrequently show the effects of impaired health of the latter, particularly if the mother's condition is broken by constant child-bearing and incessant nursery care. Still further, the earlier children, it is sad to say, often show the results of the parents' want of

knowledge and bear the marks of their experiments in child-rearing. Not infrequently two persons of little experience in anything, but of the "know-it-all" type, marry, and the result cannot be expected to be perfect. A lady once half pathetically said to the writer, when speaking of her first child: "The others will never know the debt they owe to him for teaching me." But she was a clever woman, anxious to learn.

UNJUSTIFIED FEAR OF CONSUMPTION

I have a bright little girl of thirteen months, who, with the exception of a slight attack of whooping-cough, from which she is now recovering, has always been strong and well. I have always been very careful about her digestion, which is perfect. She has ten teeth, and her limbs are quite sturdy. She has been walking since she was eleven months old. What troubles me about her is that there has been consumption in my husband's family, his mother and a sister having died of it. He is himself, although well, not very robust. Should I take any precautionary measures in the bringing up of our daughter? I believe in fresh air, and keep her outdoors on pleasant days as much as possible.

Judging from all you say as to the condition of your child, there is no reason for worrying or taking any unusual measures in her bringing up. Do not trouble yourself on account of the ancestral consumption. Do your best to keep your child in good condition, and do not anticipate disease of any kind. Of course, even a slight ailment should not be neglected; but as she has begun so well, there is every reason to think that with continued care she will develop nicely. Remember that consumption can come only from infection, and you can diminish the susceptibility to it.

THE DEFINITION OF NERVOUSNESS

I wish you would define the meaning of "nervousness" in the medical sense.

When does the particular condition of restlessness which is so common among American children call for medical interference, or at least for systematic care on the part of the mother? I have a boy of six who is certainly excitable and not particularly robust. He talks in his sleep and tosses about, although he rarely awakes during the night. His general health, however, is perfect as far as I can tell. He has begun to read, and is exceedingly fond of his primer. Would you advise sending such a child to a kindergarten? Some of my acquaintances say it would be the very thing to quiet his restlessness, others say it would make him more nervous. Is there any risk in trying?

Although we find in a recent medical dictionary the following definition of nervousness, "excessive excitability of the nervous system, especially as manifested by a proneness to mental excitement and over-sensitiveness to sensory impressions: the condition sometimes borders on hysteria or insanity," yet we think we are justified in saying that the word is a popular rather than a medical one. It is not much used by medical men when speaking with precision, other and more exact terms being used to describe various manifestations of this instability of the nervous system. When used in the general sense quoted above, its application is wide, reaching all the way from the high-strung person who is really susceptible, ordinarily well, self-controlled, and capable of superb exertion on need, to the common fidgety person, the pest of his associates. The former would, perhaps, be called by the physician a neurotic subject, the latter very probably a hysterical one. So you see we cannot give you categorically the answer you desire.

We are not sure that we can assent to the statement that a particular condition of restlessness is very common among Americans as distinguished from others. But it would take us too far to discuss this point now. We should answer your question thus: If a child manifests a restlessness which seems to the parent excessive, the advice of a good physician should be sought. By good physician, in this sense, we mean

one of some experience with children's diseases and their developmental peculiarities, who can judge wisely whether the restlessness be probably dependent upon bad hygiene, such as improper food, bad sleeping arrangements, constipation, or is due to some local source of irritation, of which defects of vision, skin diseases, pin-worms, and phimosis are examples, or again to simple imperfect nutrition in some of its many forms. The object of his search will be to assure himself whether or not any such causes can be found. If so, he will try to find the best remedy; if not, he will advise about domestic care and training, which are, after all, usually the most needed.

As to your own child, supposing that you are correct in considering his general health perfect, and assuming that this nocturnal restlessness is of recent appearance, the first thing we should think of would be the irritation of the "six-year-old molars," which may be coming. Next, we should inquire into his dietary, and especially as to his evening meal, and should examine as to the existence of phimosis. In any event, we do not think that a well-conducted kindergarten could do him harm, and, if the nervousness is not excited by any recognizable and removable cause, it would probably be of advantage to him.

WASHING THE INFANT'S MOUTH

Should an infant's mouth be washed before he is six weeks old? I heard of a case where the child's mouth was not washed from the time of birth, and I thought it conducive to thrush, sprue, or a soreness of the mouth.

It is best to wash the mouth after every nursing or feeding from the first, especially if the bottle is used.

THE GIVING OF AN ENEMA

What is the best way of giving an enema to a child? How much fluid should be given to a child of six weeks, and how

much to one of two years? Should oil, salt, or soap be used in all cases? What is the best syringe for children? How much oil should be used in proportion to the water? How long should the fluid be retained before the child is put on the chair? Any general directions about the giving of an enema will be greatly appreciated.

The best syringe for children is one of hard rubber, with a long, smooth nozzle, and having a capacity of six fluid ounces. When oil alone is injected, a relatively small quantity is used, and the intention is to have it remain in the intestines and act mechanically on the feces; its retention is best secured by firmly pressing a warmed pad of flannel against the seat for five minutes after the insertion, the child in the meanwhile lying upon its back. An enema of water may be presently used if necessary. The laxative enemata must vary in bulk with the age of the child, or, in other words, with the capacity of the rectum. One fluid ounce (two tablespoonfuls) will be sufficient for an infant of six weeks, while from four to six fluid ounces are required at the age of two years. The quantity of oil, salt, or soap to be used must depend upon the quantity of water—two teaspoonfuls of oil or one teaspoonful of salt to eight tablespoonfuls of water being a good proportion, and if soap be employed it is sufficient to stir a bit in the water until suds begin to form. After drawing the fluid, which must be tepid, into the syringe, the nozzle must be well greased and gently inserted into the seat, the point being directed a little toward the child's left; next, the piston is to be slowly forced down until all the liquid is expelled or complaints of pain indicate that the bowel is sufficiently distended. If it be possible to force retention for a moment or two by pressure on the seat, the movement will be freer and easier than if the fluid be allowed to flow away at once. The best position for the child is either on his back with the legs well drawn up or resting on his abdomen across the lap.

THE MUSTARD-PLASTER

Can you tell me how to prepare a mustard-plaster for a child? How long should it be allowed to remain on the skin? Can the plaster be put next to the skin? Is mustard-paper of any value?

A mustard-plaster for a child should be made of white in preference to black mustard, as the latter has nearly twice the strength of the former. For a patient between one and three years old, one part mustard and two parts Indian-meal or flour are to be mixed with lukewarm water—care being taken not to make it too thin—and spread between two folds of thin muslin, as a poultice is spread, only in a very much thinner layer. This may be allowed to remain on for from fifteen to thirty minutes, or until the skin is reddened or the child complains of its burning. Under one year the proportions should be one of mustard to three or four of flour, and for children of over three years equal parts may be used. Never apply the mustard directly to the skin, as some of it may escape being washed off and give rise to a blister. Mustard-paper consists of black mustard mixed with a solution of gutta-percha and spread on pieces of stiff paper about four inches square, which, when moistened, are ready for use. These sinapisms are very convenient for travelers, but their action is often rather severe, and they are not to be recommended for children.

If a child is very young or unconscious, the plaster should be carefully watched, for fear of too great irritation of the skin, a mustard blister making a very intractable sore.

KISSING BY FORCE

I believe it is high time for mothers to organize an anti-kissing club, at least so far as their babies are concerned. The matter is brought home to me almost daily, owing to the fact that I have what one fond relative calls the most "kissable" baby in town. The poor child is kissed and hugged almost to death,

certainly to the point of nervous restlessness. And then, it seems to me there is the danger of communicating some throat trouble. But one of my friends thinks that children ought to be trained early to be friendly, and that it is not wise to keep them away from fond visitors. I wish you would publish some remarks on the subject, so that I may reinforce my protest by the weight of your authority.

The promiscuous kissing of children is certainly to be deprecated on various grounds. Many persons, in their affectionate zeal to kiss a child, do not stop to consider whether they are themselves pleasant persons to kiss, and older children often feel a strong sense of resentment when kissed against their will. The contagious disorders of mouth and throat can be, and probably often are, communicated in this way. They certainly are in adults. The breath of persons suffering from whooping-cough, measles, and scarlatina is universally dreaded; but, excepting the first named, and more rarely in the first stages of the others, owing to the isolation of the patients, these diseases are probably not often spread in this way. The danger, we believe, is especially great in connection with the various kinds of sore throat, and no one with a sore throat, however slight, should kiss a child. But even a well person should consider whether his affection for a pretty child ought to be expressed in a way which may be distasteful to the child and not approved of by the mother. It is easy enough to show our tenderness by some caress which cannot harm. Certainly no child ought to be made to kiss any one against its will. Proverbially, "kissing goes by favor," and it is foolish to make an act which is universally accepted as an expression of hearty good will seem to a child disciplinary.

XXV

FEEDING PROBLEMS

THE SELECTION OF A WET-NURSE

The evils and dangers of intrusting one's delicate child to a stranger are no doubt great; but, after all, in many cases they must be bravely met in order to save the very life of the child. Artificial nourishment is at best only a makeshift. I tried it once, in the case of my second child, but determined never to bring up another child on the bottle as long as I was able to pay for a wet-nurse and bear up physically under the inevitable annoyances in her train. But not many mothers can bespeak a wet-nurse in advance, and in the hurry of procuring one in the hour of need it is almost impossible to exercise the care and discretion that are so essential in the selection of the proper person. Nor is a physician's advice always available. I have often wished to be informed concerning the physical qualifications of a wet-nurse, but have never found anything really useful in popular books or periodicals. It would seem superfluous to look for even average mental or moral qualifications in persons of the class that furnishes wet-nurses, and I know that many excellent persons object to employing them under any circumstances whatever. But those who do employ them need enlightenment. Perhaps you could furnish what I have vainly looked for elsewhere.

Before speaking of the qualifications of a wet-nurse, a word ought to be said as to the duty of the mother who is obliged to give up the suckling of her own child. It has been in effect said by another that any one who takes the responsi-

bility of bearing a child is bound to furnish its food from her own breast, or to superintend *herself* the feeding of it if she cannot nurse it. Exceptions will occur, as when the mother's health absolutely disables her; but the rule will stand. It would seem as if this would need no insistence, but it is a matter of daily observation that there are many mothers who will hardly trust the house-maid to dust the bric-à-brac, who insist on personally laying out the changes of bed-linen and dispensing the groceries, and yet who never think of inspecting, except perhaps at rare intervals, the method in which the baby's food is prepared. Further, it is proper to say that good artificial feeding is scarcely any more a makeshift than most wet-nursing.

Now, if a wet-nurse is procured a similar supervision should be exercised as over the dry-nurse. As wet-nurses are not selected from the highly intelligent classes, it is not to be expected that, without experience, they will be very handy and tactful with a baby; and an experienced wet-nurse is not usually desirable, inasmuch as young women have, as a rule, the best breasts, and experience and youth do not go together. The mother must do the watching, and remember that the nurse has been chosen for the one physical quality of a good breast of milk. If she is not handy with the baby she is usually very glad to learn if she is kindly taught.

A common complaint is that wet-nurses are tyrannical, demanding stimulants and various luxuries for the sake of the milk, and threatening to desert the baby if their demands are not granted. Occasionally a distinctly vicious woman goes out as a wet-nurse, but as a rule they are neither better nor worse than other women in their rank of life, and come with an honest intent to do their duty. On the whole, they are amenable to intelligent treatment. If they prove to be tyrants it is because of want of sense on the part of their employers. In engaging a wet-nurse, she should be made to feel, if possible, that she has an interest in common with her employer; that the employer is desirous of doing

what is best for her health and comfort, because by so doing the welfare of the child is best secured. Moreover, she should understand that it is for her interest faithfully to attend to her duties; that no trifling with her own digestion and health will be tolerated; and that, while she will be valued in proportion as the child thrives, she will not be kept for a day if she neglects its interests. Let her understand that, while you desire breast milk if it is good, you much prefer artificial feeding to poor breast milk. If these things are clearly and kindly impressed upon her there is little probability of her playing false. The other method, too often seen, is to make a sort of pet of the wet-nurse for a while, to foolishly coddle her in all ways, until she is persuaded that she is indispensable; and then, unless she is a person of unusual judgment, she is spoiled, and the employer reaps the harvest of her own folly, and considers the nurse a most ungrateful, if not an inhuman, creature.

The choice of a wet-nurse should not be made without a careful medical examination; the risk is too great. The employer may ascertain points as to the character of the nurse, and may perhaps get information regarding her previous health and the health of her child or children. But, after all, the burden of the examination is medical, and cannot be properly assumed without professional knowledge. And for the physician it is an unenviable office. Not only must he find out the condition of the breast and the supply of milk and its probable continuance, but he must search with the greatest care for diseases or defects. And in this search he is never helped by the person examined; she usually has no knowledge of the meaning of symptoms, and she lays no stress upon many things which the examiner would consider fatal objections. If she has knowledge of defects, in her desire for employment she would not obtrude them. The details of the medical examination it would be useless to give here. The physician also endeavors to distinguish between the appearances due to ill health and those due to poverty, want, and perhaps even hunger, or to distress at the pros-

pect before the nurse of leaving her own child, for which she—and often with good reason—fears the worst.

CAN THE NURSE'S OR MOTHER'S MILK BE POISONOUS?

I read once of nurse's milk (I suppose it means mother's, too) sometimes being too "poor, or so poisonous as to be useless." I wish to learn the cause or causes of this, and how one can know it, so as not to injure the infant.

The milk of a nurse or mother is rarely poisonous in the sense of producing any sudden illness. Rare cases of such effects have been reported in which the change in the milk followed fright, anger, or some violent emotion on the part of the mother or nurse. Milk usually disagrees by causing bowel troubles, or more commonly by being too poor in quality, so that the child is not properly nourished, and after a while shows that it is not. Unfortunately, in this last, and the commonest, class of cases there is no sure way of judging, except by constant observation of the child to see if it is thriving—*i. e.*, gaining weight, however slowly, keeping its firmness of flesh, its color, etc.

THE FLOW OF MILK THE FIRST DAYS AFTER DELIVERY

Will you please tell what is best to be done on the two dreadful days after birth, "before the milk comes"? If there is to be none, would it not be as well to feed the child at once? Why is there such a break in an infant's nourishment?

Those days are not always "dreadful"; indeed, we think they rarely are so in this day of good nursing. That the absence of the milk is not a detriment to the baby may be inferred from the fact that most living things in nature are adapted to their surroundings, and also from the following facts: Not only infants but all young mammals pause in

their growth for a few days, perhaps for a week, after their birth, and they may absolutely lose weight. A similar delay is noticed in newly hatched chickens, which, of course, never depend upon the mother for food. The experiment has been tried, in a series of cases, of putting new-born infants to the breasts of women who had been delivered a few days previously and whose flow of milk was established. These children all lost weight like others. The cause of this loss is not certainly known, but is believed to be due to the fact of the establishment of respiration and the necessity of the child's furnishing its own heat instead of getting it from its mother. More tissue is burned up until the new order is established. Besides, the intestinal canal is emptied of a considerable amount of gradually accumulated matter. If during those days the child is kept warm and its thirst quenched with warm liquid, it generally makes little complaint.

GOAT'S MILK AND ASS'S MILK

Are goat's milk and ass's milk ever prescribed for children? How does such milk differ from cow's milk?

Both have been given, but rarely in this country. Goat's milk is fatter than cow's milk. Its smell is disagreeable to many, and it has no advantages over cow's milk. The milk of the ass has less fat and proteids and more sugar than cow's milk, and is in these, as well as in some other peculiarities, intermediate between cow's milk and human milk. It has been considerably used upon the Continent. Mare's milk is much like ass's milk.

TESTING THE QUALITY OF BREAST MILK

How rich should breast milk be? That is, if drawn and placed in a bottle to the depth of two inches, how much should the cream measure?

If you let it stand in a room of ordinary temperature twenty-four hours the cream should be on an average nearly one eighth of the whole, say a quarter of an inch in two inches. Variation between one tenth and one fifth may exist in milk upon which the mother's infant thrives, but the average is as stated. A test tube with a rubber cork, which may be obtained at the apothecary's shop, is a more convenient apparatus than a bottle for testing. But this testing by eye must not be considered as absolute.

OBJECTIONS TO GIVING BREAST MILK BY SPOON

I would like your opinion on the practice of drawing mother's milk at one nursing, and feeding it to the baby by spoon or bottle for the next. Is it as good for the baby? And does it remain unchanged by standing and being warmed?

For various reasons, it is not a good plan. Not to mention other objections, the milk is no longer the sterile liquid which it probably was, or nearly so, when it came from the breast.

BOTTLE VERSUS SPOON

Do you think that a little baby could be fed as satisfactorily by spoon as by bottle once a day? I dislike bottles, and never used one when I weaned my first baby at ten months, but do not know whether a spoon would be too fatiguing for a three-months' baby.

We prefer the bottle if kept clean. The only circumstances under which we prefer the cup and spoon are when we think the attendant will keep them clean and cannot be made to keep a bottle and nipple clean. A child of ten months is no longer "a little baby" as nurses use the phrase.

"SUCKING WIND"

Is it possible for a baby to "suck wind" into its stomach from a nursing-bottle? I had always accepted it as an unquestioned fact until, in a recent number of a periodical, I noticed that the idea was ridiculed. Nurses and mothers might be relieved of considerable anxiety in this matter if it could be shown that "sucking wind" is only an "old-woman's whim," as alleged by the writer of that article.

There is nothing ridiculous in the supposition that a child may "suck wind" from a nursing-bottle improperly managed. Cases of air-swallowing by adults are cited in works on medicine. The celebrated French physiologist Magendie made extended researches on this point. He found that many persons had the power of swallowing air, and he learned to do it himself, but gave up the practice owing to the distress it caused him. "Wind-sucking" is a familiar enough vice in horses. There is, therefore, nothing ridiculous in supposing that a baby with good sucking power might swallow air. How far infants actually do so is another matter; the distinction between a colic from swallowing of air and one from gaseous indigestion can be made only after patient watching of the symptoms. The rule should be: Manage the bottle so that the baby cannot get air from it.

COMBINED NURSING AND BOTTLE-FEEDING AT ONE MEAL

Do you think nursing and bottle-feeding together at the same meal bad for a baby?

We do not like it, not so much because of the mixing of the two kinds of nourishment, as because, if the breast is not equal to the total feeding, it ought to have the needed rest. Further, the child contracts a bad habit of wanting the breast

with artificial food, and weaning becomes difficult. Still further, it is impossible to know just how much a child is taking when this confused method is employed.

THE SIGNS OF INSUFFICIENT BREAST MILK

I have so frequently seen it stated that few mothers have breast milk of sufficient quantity and quality for a baby of eleven or twelve months, that I should like to inquire what are the indications that a baby needs more nourishment than the breast, and whether you approve of changing to artificial food by degrees, giving one bottle a day for a month or two, perhaps, and slowly adding more. I have been taught that a baby during the first months of its life should gain one half-pound a week in weight. How long should this gain keep up, and does a sudden lessening of the gain indicate that the breast is not satisfying, and what other food is required?

The signs that the milk of a breast is no longer equal (either in quantity or quality, or in both) to the needs of the child are a diminution of increase in weight, softness of flesh, paleness, clamor for more prolonged or more frequent sucklings, and the like. During the early months a gain of half a pound a week may be accepted as evidence of decidedly good nutrition, provided the flesh be firm and the color good. After five or six months as much as this can hardly be expected. The gain will be less and vary somewhat. But a sudden, material lessening of the rate of gain should always be looked upon with suspicion, and if it persists more than a week or two the condition of the breast should be investigated, and usually a need of additional food will be discovered. We approve of the gradual method of increasing the food, provided it appears that the breast is still valuable to a considerable degree. Often it proves of so little value that rapid substitution of artificial food is necessary, the breast serving only to amuse or quiet the child at night.

NURSING ANOTHER BABY IN ADDITION TO ONE'S OWN

Is there any harm in nursing a baby four months old (with whom no food agrees, its own mother having no milk) when one's own baby is but a few days old? Is the difference in ages too great, and will the young baby suffer? If there is harm in so doing, please state how.

As a rule, the new breast agrees perfectly well with the older child, unless it has some form of digestive trouble which forbids the use of any kind of milk. On the other hand, we do not know whether the new babe is to get enough from the breast. The new one ought certainly to have the first chance, and the visitor should come in for what is left. Besides, extra care of the nipples is necessary when one suckles a baby who is not well, and care of the mouth of the sick baby is also necessary. The disadvantages in the case seem to be on the side of the new baby, who is the proper owner of the breast.

THE SUPPLY OF BREAST MILK AS COMPARED WITH THE ALLOWANCE OF BOTTLE-FED BABIES

How many ounces of milk should a six-months-old baby be allowed to have at a feeding? I have been told six ounces, but as that never seems to satisfy her, I have been giving her between seven and eight. She has seven meals in twenty-four hours. Breast-fed babies nurse till they are satisfied; why not let bottle babies do the same? Why are they limited to a certain number of ounces while breast babies have an unlimited supply?

The amount at six months varies a little with different babies. Six would be an average demand, seven a large amount. But only six meals are proposed on this basis. Your child at six months is getting between seven and eight ounces seven times a day; that is between forty-nine and fifty-six ounces daily—a pretty heavy allowance of food, even if properly

diluted, for a child of one year. You say "of milk," but we assume that you mean diluted milk.

Your assumptions about nursing babies are wrong. If you were to weigh one before and after nursing, you would find that almost never does one get as much liquid as your child gets. The breast milk is far from "an unlimited supply." The amount recommended for artificial feeding is based upon accurate observations of nursing babies. Why your baby is not satisfied we do not know. Very possibly from an over-distension of the stomach and overtaxing of digestion.

EVILS OF EARLY MIXED FEEDING; EFFECT OF THE MOTHER'S DIET UPON THE CHILD'S TEETHING

Should a child from three to five months old be fed at all at the table when there is a sufficiency of mother's milk? If so, what should it be given? My babe, now five months old, seems to delight in eating, and, as I think I have enough milk for her, I hesitate in giving her solid foods, though I am advised to feed her by ladies who feed and also nurse their babies with no apparently bad results. My baby is troubled with constipation and I am told that feeding her will overcome it.

Is it right and proper to "chew" food for babies?

Cannot a mother that suckles her babe hasten or retard its teething by selecting her diet; *i. e.,* if early development of teeth is wanted, partake of bone-making foods, and *vice versa?*

A child should have nothing whatever from the adult table before a year and a half at the earliest, preferably not until two years. Solid food should not be allowed until after a year, and then it should be bread, gruels, porridge, and possibly an egg; but these should be prepared for it and given it by itself, not at the adults' table. To let a child come to the table is only to teach it to beg for things it should not have. Let it be fed before your meals, so that it shall not be tantalized at seeing you eat when it is hungry. Treat any person who gives your baby "tastes" of things as your

"dearest foe." To give solid food to a child on the breast is too incongruous to be seriously considered. Constipation is undesirable, but a small matter compared with what usually results from such mixed feeding.

If you mean the chewing of food by an adult and then putting it into the baby's mouth, it certainly is not right. It is simply disgusting.

Good health and good milk-supply in the mother help to develop the child well and rapidly, teeth included. But so far as we know or believe, there is no diet of the mother which will help the teeth of the child in particular. The only way of retarding the teeth that we know of is to give the baby poor nourishment, and this retards its development in every other way.

FEEDING AT NIGHT AFTER WEANING

My boy is now nine months old, and gets all his nourishment from the breast. I am very particular about my diet, eat oatmeal, milk, eggs, fruit, etc. He is nursed once in three hours, night and day. Shall I feed him in the night, after he is weaned, and if so, how often?

If you have not diminished the frequency of nursing before you begin to wean the boy, you will have quite an undertaking before you; for if you have to prepare food every three hours, night and day, your sleep will be badly broken. It may be, however, that his frequent demands for food are due to the fact that the breast milk is now deficient in quantity or quality, so that he is not properly fed, and if he gets a full supply of food at one time he may be content for a longer time. Try to alternate the food with the breast; let him take a good bottleful of the food, and then lengthen the interval after it. We fear that your habit of too frequent nursing will prevent your cutting him off altogether at night at first, but a child as old as he ought to go at least six hours without food at night. If he is fed at the parents' bedtime he ought to need no food till toward morning.

THE TESTS OF RICH MILK

I live in a part of the country which is noted for the excellence of its milk-supply, yet I have my doubts about the quality of the particular milk which is furnished me. It somehow has not the rich flavor to which I am accustomed, and looks rather thin. My purveyor is a well-to-do farmer, who supplies me with the choicest vegetables, and I don't like to suspect his honesty as to the milk without good cause. Is there any way by which one can positively tell whether milk is skimmed or not?

You can set some of the milk to raise the cream in a straight-sided test-tube, and guess by eye the percentage of cream. Or you can get an ordinary druggist's graduated glass, or even one of the bottles in which milk is sold, upon which a mark is blown to indicate the point to which the cream after rising should reach down. This will not positively tell you whether or not the milk has been skimmed, but it will tell you whether or not it still contains cream of the standard amount.

SCUM ON BOILED MILK

Will you tell me what part of the milk rises to form the scum on the top when boiled, and whether it should be removed or stirred in before feeding to a child?

We do not remember to have ever seen a chemical analysis of this scum, but suppose that it is chiefly the milk albumen, and probably some fat mechanically mixed with it by the boiling. Whether it is to be rejected or not is a question of palate. Personally, we throw it out.

A WARNING AGAINST SOUR MILK

Can you tell me what to do when the milk sours with which I have to feed my eight-months-old child? My milkman comes at night, and on one or two occasions the milk has been sour at the two-o'clock meal the next day. What can I give my child

as a substitute when this occurs? It troubles me when I try to think of what I should do in case of not having any milk.

The milk I get is usually very good, and the man who brings it says the souring is caused by some cows going dry. Ought such milk to be used?

Under no circumstances should sour milk be given. During hot weather it is better to attend to the preparing of food and sterilizing of milk as soon as the latter is received. In case of milk souring, if sweet milk cannot be had, we should use condensed milk, or even water gruel, for the day, rather than give any doubtful milk.

DANGERS FROM IMPURE MILK; WHEN STERILIZATION IS NECESSARY

Is sterilization of milk necessary in the country for a child of fourteen months? What, specifically, are the microbes to be feared from non-sterilization? I mean, are they germs of known diseases? What particular harm is done by spoiled milk?

It can be told only by the results. If the consumer of the milk escapes disease it was not *necessary* to sterilize. But we would say that it is probable that if you control your milk-supply—including care of cow, its stabling, care of the milk and all—you are safe. The amount of simple filth which is separated from ordinary milk by the centrifugal separator is appalling. The germs of known diseases which may, and not so very rarely do, infect milk are those of tuberculosis, scarlatina, and typhoid fever. Other diseases are less frequently conveyed by milk. In addition, there is a good deal of harm done by the bacteria which cause the ordinary spoiling of milk, and which set up bowel troubles; and —rarely, it is true—the terrible poison *tyrotoxicon* causes a vicious choleraic disorder.

KEEPING STERILIZED MILK IN SUMMER

Will you tell me whether you think it necessary to keep sterilized milk on ice during the warm weather? Our summers are quite severe at times, the thermometer registering from 80° to 95° in the house. I have never used the sterilized milk before in the warm season, and so I am ignorant as to what I should do. At present I keep the bottles in as cool and breezy a window as I can find. The milk is thoroughly sterilized, boiling hard forty-five minutes, and has never yet disagreed with my nine-months-old baby, who has taken it almost since birth.

Milk which is thoroughly sterilized and thoroughly well corked need not be iced. In fact, so far as its sterility goes, it ought to stand anything so long as the bottles are tight. When milk is only partially sterilized or imperfectly corked, or in any way neglected in the preparation, of course this remark will not hold. In every case of doubt the bottles should be iced.

DOES STERILIZED MILK CONSTIPATE?

Are there not cases where sterilized milk will produce constipation?

Yes, practically. That is to say, the milk, having been rendered unirritating by sterilization, no longer stimulates the bowels to the degree that raw milk does, and is constipating in the same sense that white bread is constipating as compared with coarse bread. To speak more accurately, we should say that sterilized milk was not laxative as compared with uncooked milk; and so some infants using the sterilized become, temporarily at least, more constipated than before.

INJURIOUS QUALITY OF LIME-WATER

Will you kindly give me the proportion of lime-water to be used in a seven-ounce bottle of sterilized milk? Some physicians

say a tablespoonful, others say that amount is very injurious for a child nine months of age, and that a teaspoonful is all that should be used. If a tablespoonful is given, what bad results would follow its use?

The amount varies with conditions. Thus, if a child were ill, we might use more than we would in health. Again, it varies with the milk. The object of the lime-water is to change the reaction of the milk mixture so that it shall resemble that of breast milk. Thus, breast milk is usually slightly alkaline. Cow's milk, as milked, is neutral or slightly acid; as sold, usually distinctly acid. We are speaking of chemical reaction as shown by litmus paper, not by taste.

In making a food mixture we usually add lime-water after sterilization until the mixture is slightly alkaline. A seven-ounce mixture will usually be made alkaline by five per cent. of lime-water, say two and a half or three teaspoonfuls. But if the "sterilized milk" be undiluted milk, then, probably, more lime-water would be needed. We do not think that a tablespoonful would produce any distinctly bad results, but if a less amount of alkali will produce the result it is better in health to use less.

Litmus paper is cheap; it can be bought of a druggist, who will show you how to use it. It should be cut into very slender slips and kept in a tightly corked vial.

FOOD VERSUS SLEEP

My baby, four weeks old, will sleep three, four, and five hours at a time. Should he be awakened to feed him? He has never had any kind of soothing syrup.

He certainly need not be awakened at night. By day the feeding will need to be attended to rather more frequently, if regular habits are to be established. The child need not be rudely awakened, but when the time for his food arrives, the bottle can be prepared, the nipple put into his mouth, and the child gently aroused sufficiently to take the food.

THE PREPARATION OF BARLEY-WATER; ADVISABILITY OF STERILIZATION; QUANTITY OF MILK AND BARLEY-WATER FOR A ONE-YEAR-OLD

I shall not wean my baby of ten months and a half for another month or two, but would like to know whether you would advise sterilized milk or the top-milk plan. If the latter, will you kindly give directions how to prepare the same, also how to prepare barley-water to use with sterilized milk? I must depend upon a milkman for the milk, and thought on that account the sterilized would be better than the top-milk. I nurse my boy every three hours during the day. He weighs twenty-two pounds and has four teeth.

How much milk, or milk and barley-water, should he take in twenty-four hours?

For a child of a year it is not necessary to prepare milk as for a young infant. Milk diluted with barley-water will do well enough. The milk may be sterilized if there is any doubt of its perfect purity and sweetness, or if there is doubt as to its keeping. Sterilization is not an attenuation of top-milk or any other mixture. Any mixture may be sterilized if desired. It is a method of preserving, not of mixing.

A good receipt for barley-water is this: Three tablespoonfuls of pearl barley, three cupfuls of boiling water, and just enough salt to take off the "flat" taste.

Pick over and wash the barley carefully. Cover with cold water and soak four hours. Put the boiling water into a farina kettle, stir in the barley without draining, and cook, covered, for an hour and a half. Strain through coarse muslin, salt and sweeten slightly, and give when it is cool enough to be drunk with comfort. He will take, if he has an average appetite, three pints of milk and barley-water at a year old, and will probably take more soon. The mixture at the beginning may be half-and-half, but presently gradually increase the proportion of milk.

THE VALUE OF BARLEY AND OATMEAL GRUEL

Is not barley gruel with milk more constipating than milk diluted with water?

Why is it considered better to use barley gruel or oatmeal gruel with the cow's milk for a child with weak digestion?

Barley gruel does not, in our judgment, increase the constipating effect, but it is less laxative than oatmeal gruel.

The salts contained in the gruels are useful, and many believe (while some disbelieve) that the gruels favor the formation of a finer and more digestible curd of milk on the stomach.

HARMFULNESS OF NEW BREAD AND COOKIES

Will you please say a convincing word to mothers against the use of new bread and cookies for the little ones? I know many a mother, so careful lest her child get wet or "take cold," who yet destroys digestion by the use of these two articles of diet; and by no means is it the uneducated mother alone who thinks, as one said to me, that "fresh bread is good enough for any one." I suppose that new bread and pies, more than climate or work, have made us the nation of dyspeptics that we are.

We doubt if we can say a "convincing word," for we believe the habit of giving children such things comes not from ignorance, but from that lazy amiability which prefers to gratify them at the moment rather than to deny them anything at the cost of some self-denial and perhaps transient trouble. We can hardly imagine that intelligent persons really suppose these things good for children, but they simply follow their natural bent and deny the harmfulness of any course they like to pursue.

THE RELATIVE MERITS OF GRAHAM AND WHITE BREAD

Please inform me as to the relative merits of Graham and white bread for a child sixteen months old?

The theoretical Graham flour is unbolted and contains the bran. Practically, if we mistake not, this is not entirely true. Graham bread, as sold in the shops, seems to be made of something like half Graham and half white flour. Assuming, however, that you have a real unbolted wheat flour—and we ought first to premise as regards all we here say that the child has its first molars, or chewing teeth—the differences would be about as follows: The wheat bread would be a trifle the more digestible if both were equally well made and equally stale—*i. e.*, not fresh. The Graham would be the more nutritious if digested. The Graham would also be rather more laxative, especially if it be made, as is usual, with the addition of a little molasses. Much would depend upon individual digestive ability. If Graham bread were given its effect should be noted.

BALLS FROM GRAHAM FLOUR

Could not flour-balls be made from whole-wheat flour, or rather from sifted Graham, which would be more laxative and more nutritious than if made from white flour? We buy the whole wheat and have it ground fine, and use a great deal of it in the family.

They could be made from those flours, but, as the composition of the white flour is changed by the prolonged boiling, similar changes will take place in the Graham flour, and if that part only which will pass through a sieve is to be used, the result would probably be almost identical with the ordinary flour-ball. There is, however, no harm in trying it.

GRAHAM, OATMEAL, AND THE VARIOUS PREPARED CEREALS

What do you consider the most wholesome flour of which to make bread? What *is* Graham flour, and what is its value as a food, actual and as compared with other flours?

What do you think of oatmeal as an article of food? What is

the most nutritious and palatable preparation of any grain known to you in a form suitable for use, say, on the breakfast-table.

All things considered, we should regard a very finely ground wheat-meal the best for bread for "the average man." Theoretically, Graham flour is such a meal; practically, we are inclined to think some parts are removed. As made at bakeries, Graham bread contains bolted flour to dilute the Graham flour. If made at home it becomes a very wholesome and, to many persons, palatable bread. White flour has lost much of the nutrient part of the grain and is very largely starch. Some persons—those of the "gouty diathesis," for instance—are injuriously affected by a starchy diet; for such, white bread is not very wholesome.

Oatmeal is very nutritious and, if well cooked, an excellent article of food. In our judgment, however, many persons more than offset its nutritive value by injurious amounts of syrup or sugar eaten upon it. With salt and milk, or cream, it is to most stomachs digestible and, to our taste, delicious. Meal of poor quality or badly cooked is detestable. Oatmeal and the various forms of cracked or crushed wheat—the trade names are legion—which retain the entire grain, are the most nutritious of grain foods for the breakfast-table. The palatability must be judged by the eater. Occasionally oatmeal disagrees, being popularly said to be "heating," particularly to persons with a tendency to eruptions.

HONEY AND MOLASSES

What is your opinion of honey and the ordinary brands of molasses as a part of the dietary of children?

Honey is a mixture of several sugars and of other things. For some reason it often disagrees, and persons of good digestive power not infrequently suffer violent attacks of indigestion from it. If it agrees it may be used under the same

restrictions as other sweets. Concerning molasses as an article of food, our opinion is the same as concerning sugar. It has the advantage that it may be added to food as a laxative when one is necessary, but it is inferior to some fruits, if they are obtainable.

POP-CORN

Will you please say whether pop-corn is good or healthful for children between the ages of three and eight?

There is a long gap in digestive ability between the years three and eight. Pop-corn eaten at a meal, and well chewed, although not a desirable food, may be borne well by many children of eight. We should not think of giving it to those of three. But there remains the objection that children do not eat pop-corn at meals, but at other times when they should not eat anything.

OATMEAL GRUEL AS A LAXATIVE

Please send directions for making oatmeal gruel to use as a laxative.

Oatmeal gruel is made in many ways to suit the taste—*i. e.*, with or without milk, with or without sugar, etc. It should always be salted. When used as a laxative diluent of milk it should be made only of oatmeal, boiling water, and salt. Four tablespoonfuls of the meal will be enough for a quart of water. Add salt, say half a teaspoonful, to the oatmeal in the cooking-vessel; pour on the quart of water. The precise method and time of cooking will depend upon whether you use a double "farina" kettle or a simple saucepan. In the latter case it must be stirred to prevent burning, and the evaporated water made good from time to time. An hour's boiling is usually enough.

IS OATMEAL "HEATING"?

My little girl of four is very fond of oatmeal, and, in fact, prefers it to anything else. During last summer some of our friends thought we gave her too much oatmeal, considering it too heating. Is this the case? And if so, is not oatmeal, then, of corresponding value in winter?

It is one of the stock phrases which some people are fond of repeating, that oatmeal is "too heating." If this phrase has any particular meaning, it is this, that some persons, particularly in summer, do not easily digest oatmeal, as evidenced by flatulence, by constipation in some cases, or by a tendency to skin eruptions. If these or any other symptoms which your physician thinks may be fairly attributed to the oatmeal occur, it would be proper to stop or diminish the oatmeal ration. But you say that it does agree with your child's digestion, and mention no other symptoms. So we are left to conclude that your friends have no other ground for their suggestion than the desire to appear wise by giving irresponsible advice.

INCOMPATIBILITY OF FRUIT AND MILK

What is there in the popular idea that milk and fruit do not go well together? My little ones are inclined to constipation, so they need all the fruit they can digest; but they must either go without milk, which is one of their chief articles of diet, or eat the fruit at their meals with their milk, or eat the fruit between meals, which seems to me a bad habit to establish. Which of the three ways is best?

The incompatibility varies with different fruits and with different digestions. So far as a general rule can be given, it is this: You know that many fruits—baked apples, peaches, berries—are habitually served with cream, said "cream" being as often as not only top-milk. Very acid or unripe fruits do seem sometimes to disturb the digestion of milk.

Ripe, sweet fruits generally do not have this effect, and may be given, if the child is old enough to have fruit, irrespective of milk. One reason, it seems to us, that milk and fruit disagree is this: They are eaten together, and whole berries, perhaps, with tough skins, or unchewed pieces of larger fruit, are washed down and cannot be readily attacked by the digestive juices. We have supposed that the indigestion sometimes following huckleberries and milk, for instance, was due to this fact, and would not have occurred if the berries had been served dry and the child obliged to chew them well, the milk being swallowed later in the meal. In giving fruit to children the parent must carefully select for each child what it is to eat, and see that it is properly prepared. Cooked fruit and milk rarely disagree—the traditional baked apple and milk, for instance.

The habit of giving fruit between meals is not bad if the fruit hour is fixed and it is made a meal. This may be on rising—which, when constipation exists, is a very good time—or it may be between breakfast and the midday meal. To young children we prefer not to give any uncooked food except milk after the latter meal.

STRAWBERRIES AT FOUR YEARS

I would like to know what you think of strawberries for a child of four years?

There is no fruit about which there is so much uncertainty as the strawberry, owing to the quite common idiosyncrasy which makes its possessor unable to eat the strawberry (as well as some other things) without severe indigestion or an attack of hives (urticaria). Nevertheless, if experiment reveals no such peculiarity, we believe strawberries admissible at the age you mention, provided they are fully ripe and fresh, that they are taken early in the day or at noon, and do not form a part of the same meal as milk. Good berries, ripe enough to eat, need but little if any sugar (how good the old

hillside berry was without any!), and taken with a biscuit or a slice of bread, the quantity moderate, make a proper part of the midday meal, or may form the forenoon luncheon usually needed by the four-year-old.

SMUGGLING MILK INTO THE BILL OF FARE

What is to be done if a child refuses milk altogether? My little girl of a year and a half takes the milk with her cereals nicely, but does not like it by itself or in the shape of prepared foods. If I cannot teach her to like it, what would you advise?

There are some children who do not like milk. The only way is to coax in all you can. A little later on it can be hidden in various dishes; for instance, celery soup and clam broth can be made to introduce a good deal of milk into the system. If these do not succeed, the albuminoids can be made up by the use of broths, finely chopped meats once a day, eggs occasionally. The fats can be made up by butter, cream, egg yolk, fat meat, or, in an emergency, cod-liver oil.

BANANAS, APPLES, AND ORANGES

Can a healthy boy twenty-two months old eat half a banana at a time, or any banana at all? And if not, why not? He has been given a quarter of an apple at once and part of an orange, and sometimes grapes, with, of course, skins and seeds always removed. These three last fruits he has had for a number of months past.

He should have no uncooked banana at all. Only the most accomplished masticator can do anything with the tenacious pulp. It is palatable, but even for adult use it should be either very thinly sliced or scraped up. In our judgment, it it a hazardous experiment to give this fruit to any child who is not at least five years of age. The apple is not advisable, but if you scrape the pulp very fine it may be given if constipation demands it; otherwise, wait. The

orange, carefully divested of seeds and of the fibrous part (best accomplished by cutting the orange across and feeding with a spoon what you wish to give the child), will probably do no harm; the grapes, perhaps, are also admissible if carefully prepared, but in hot weather they would better be omitted. A child of the age mentioned should not be allowed to feed itself with fruit.

THE USES OF SAGE-TEA

Is sage-tea beneficial to children?

Sage-tea is sometimes of use medicinally. It was anciently held in high esteem, but is now chiefly used in domestic medicine. It makes a good gargle, especially with the addition of alum and honey. It is also useful as a tonic to the stomach when there is flatulence, and sometimes allays nausea. Made weak, it is a grateful drink to many persons in fever.

THE ABUSE OF SUGAR

Should sugar be a constant ingredient in the simple food (bread and milk, rice and milk, etc.) given to a child under two years of age? One hears that too much of it causes digestive disturbances. Is it necessary for the child to have any?

In our opinion, after a child is old enough to eat rice or bread, sugar is not needed at all. If it can properly digest these articles of food it can, from their starchy constituents, manufacture enough sugar for its needs. We think it far better to teach the child to take its bread and milk or rice and milk with a proper seasoning of salt, and without any sugar at all. To add sugar is only to tickle the palate at the risk of the digestion and general health.

BREAKING THE "BOTTLE HABIT"

Can you tell me how to cure a child of the "bottle habit"? Although nearly four years of age, she still clings to her bottle,

and if we wish to spend the day or evening out, that bottle has to go along. Is it good for a child of that age to stick to the habit so? We have tried all manner of expedients without avail.

We have seen such cases of late use of the bottle. The habit is of no use to the child, perhaps not a positive detriment to her digestion, but it is a harm to her *morale* to be allowed to dictate to her parents at her age. We have known instances of the parents waiting until the child was old enough to be shamed out of the habit. But there is one simple way, and only one, of breaking the habit—that is to take away the bottle. It will make a trouble for twelve or twenty-four hours, but if the parents do not yield—simply preparing the food and offering it in a glass—at the end of that time it will be taken, sparingly, perhaps, at first, but presently in full quantities. This assumes, of course, that there is no deformity of the mouth, and that the child can drink water. It strengthens the resolve of yielding parents to break every bottle in the house before beginning the experiment. It is better not to begin than to yield.

TEACHING BABY TO EAT; THE NEED OF WATER TO QUENCH THIRST

My six-months-old baby is a large twenty-four-pound boy who has never been sick and is just as healthy and happy as a baby can be. Two teeth are now through without any trouble, and this leads me to suppose the time has arrived for feeding him, as up to the present he has never tasted anything but milk of nature's own providing. There seems as yet to be no lack of this natural supply, but is not the presence of the teeth an indication that he ought now to be taught to eat? If so, what food ought first to be given him, how often, and in what quantities?

Ought little babies to drink cold water?

The presence of teeth is not an indication that he ought now to be taught to eat. Inferences from "indications" have

to be drawn very carefully, or else we shall overlook very evident counter-indications. If the child were taught to take artificial food his two teeth (incisors) would be of little help to him; he cannot bite liquid food with them, and he cannot chew solid food until he gets his molars. This child's weight and prompt dentition are evidence, so far as they go, of his health and proper nutrition. The question for you to decide is how much longer you can properly nourish him alone. This question you may have to refer to your family physician. When you have decided this you can begin to teach the child to take artificial food as a preparation for complete weaning.

Cool water may be given to babies, but not iced water, as a rule. They often are thirsty and nurse only to quench thirst and not hunger. The quantity of water given at one time should be small.

PURE VERSUS DILUTED MILK AT TWO AND A HALF YEARS

Is it advisable to dilute the milk for a child of two and a half years? It is claimed by my wife that the milk is too rich, and that with a slight admixture of water it agrees better with our boy. I think that since milk is his principal nourishment he ought to have it pure, and that if rich it is all the better on that account.

The child enjoys his meals and seems to be in good health, as far as we can tell.

The answer depends upon the quality of the milk and the digestive powers of the child. A child of two and a half years, of ordinary digestive power, can take the milk—especially if warmed slightly—of an ordinary cow undiluted. Jersey milk, with an unusual amount of cream, may be too heavy if pure. But it is always safe to err on the side of over-dilution, and to make up the nourishment, if necessary, by increased quantity.

BUTTERMILK AS FOOD FOR CHILDREN

Do you consider buttermilk a suitable drink for a child of four? My daughter is exceedingly fond of it and generally prefers it to sweet milk. It agrees with her perfectly. If given at all, is it just as good in the morning as at any other time?

There is, in our experience, buttermilk and buttermilk. One, the buttermilk which has stood a good while before skimming, and which is bitter and sometimes sour; this we recommend to no one. The other is sweet and innocuous. We know of no good reason why a child should not drink it. It is no more difficult of digestion than ordinary milk, and to some, perhaps, less so. Of course, the absence of fat removes from it the laxative element, and it would probably be less laxative than ordinary whole milk. We think it would be just as good in the morning as at any time.

ICE-CREAM

Do you consider vanilla ice-cream injurious to children above three years of age, if given in small quantities and eaten slowly?

To this question an explicit answer cannot be given. In the first place, simple ice-cream (not the remarkable concoctions of the confectioner, but a simple mixture of cream and sugar, with flavor, frozen), in moderate quantity, would seem to be as inoffensive as any sweet that could be devised. But whether or not it is so depends upon several things. First of all, the same cream which, eaten slowly (small pieces being allowed to melt in the mouth), would be harmless, would help to set up an indigestion if large pieces were allowed to go to the stomach while very cold.

But in our judgment a great distinction is to be made between those who can and those who cannot eat sweets. We know that there is a very large class of people who can-

not safely eat much of certain things (sweets, starchy food, including bread, potatoes, and many others seemingly harmless), without sooner or later suffering for it in some way. This group of persons are called the gouty. They are relatively more abundant among the head-workers than the hand-workers. The offspring of such persons early show this inability to properly dispose of sweets, and to such children even ice-cream is not harmless.

INORDINATE FONDNESS FOR SALT

My little girl, three years old, apparently healthy, is very fond of common table salt. I am sometimes obliged to punish her to keep her from eating it in great quantities. Is it injurious?

A good deal of salt may be eaten without harm except the exciting of thirst. Just what quantity is harmful in any given case cannot be definitely stated. The best way is to give the child a liberal allowance and not allow her to take it herself. Keep account of the amount and watch results, and if you find any disagreeable ones that you think probably due to the use of the salt diminish the quantity. The exact amount meant by "great quantities," of course, we do not know, but the taste and the desires of different adults vary greatly, and there is no reason why those of children should not.

WHY FROZEN CREAM IS UNSUITABLE FOOD

Will you state whether milk and cream undergo any chemical change by being frozen? I have noticed so often that cream after being frozen does not mix when put into coffee; the fatty part seems to separate and float on top. Does the cream deteriorate in any way for children's use by having been frozen?

Cream, when first raised, consists of particles of fat held in suspension in the watery part of the milk. When this condition of emulsion is disturbed the fat separates in the form of

butter. The object of churning is to mechanically cause this change. Much shaking has a similar effect, and we have often noticed it after freezing, and suppose that the change is due to the freezing. Cream which has become buttery is undesirable for making infant food; in fact, the fattest kinds of cream, even if fresh, are not so good as lighter sorts. The fat cream, if used, should be used in place of butter on bread and other things for children old enough to eat them.

USES OF FAT IN FOODS

Would any serious difficulty arise from a lack of fat in the food, and what would be its first indication?

Would not a lack of fat be favorable to the good health of a baby who evidently has a strong tendency to an excess of flesh?

My youngest has been using artificial food over two months, and has been growing large and fat. Is not that an evidence that it is agreeing with her?

Lack of fat would be a disadvantage just as deficiency of any of the principal elements of food would be. There has been some doubt raised as to whether deficiency of fat is as serious a drawback as other deficiencies, and, perhaps, with the great safeguards we have against loss of heat in warm houses and clothing, the doubt may be well founded. But it is better usually to keep the food as near the theoretical standard as is practicable. There are other uses of fat, as a laxative, for instance, which should not be overlooked. Besides, in the first year lack of fat seems to induce rickets.

Fatty food does not much tend to the production of fat in the consumer. The sugars and starches are much more fattening.

So far as it goes, increase in size is evidence of food agreeing. Growth in stature is a better evidence than simple increase of fat, which last is consistent with poor nutrition in other ways.

VARIETY IN FOOD

When you speak of a simple diet for children, do you mean that there should be little variety?

Do you think it best that a boy of two and a half should have oatmeal gruel every morning if it agrees with him, or would you vary his diet?

Simple diet generally means simple in character. Thus, a piece of beef roasted or steak broiled would be "simple," while the same beef as part of a beef stew would not be. We do think, however, that young children should not have much variety in kinds of food, while they may have a variety in the kind. For instance, take the cereal preparations: they are used monotonously as to course, but one may vary the course with oatmeal, hominy, or a wheat preparation.

Unless you see some sign of disagreement with his digestion, or he tires of it, we know of no reason why he may not have the gruel regularly.

THE EFFECT OF TEA ON CHILDREN

I want to ask whether you think that a teaspoonful or two teaspoonfuls of tea, as it would appear in an ordinary grown-up person's cup, put into the hot water and milk of children of four and six would interfere at all with their health? The children do not care to take this drink of hot water and milk alone, and if they get the slightest coloring of tea or coffee they seem to relish it—more, I think, from the idea that they are getting something that others are having than from anything else.

It is not probable that the amount of tea would have much effect. We cannot definitely say, as the tea, "as it appears in an ordinary grown-up person's cup," is a mixture of most variable strength. One person may take it five or six times as strong as his neighbor. Further, the effects of different kinds of tea vary very much, and, moreover, the suscepti-

bility of different persons is very different, and to some the injurious effects seem to be cumulative. Let us assume, for the sake of argument, that the tea as mixed is, as such, harmless. What is accomplished? You have made the children acquainted with a stimulant which they would better not know before adult life, and you have let them understand that by persistence they may have at table something which one parent at least thinks is not good for them.

COCOA

Is cocoa a good breakfast drink for young children?

By cocoa we understand an unadulterated preparation of the roasted nut of good quality. There are all sorts of preparations on the market, varying from the costly chocolate down to the husks or shells, not to mention adulterated or spurious articles. For a young child the addition to milk of a substance rich in fat and nitrogenous ingredients—as is really good cocoa—makes a mixture, in our judgment, usually too rich, unless it be understood to be a food and not a drink. Chocolate and bread would make a meal, if the power of digesting fat is good. The multitude of preparations of cocoa from which the fat has been more or less removed we do not discuss, as it would require a minute knowledge of each preparation.

FEEDING A PREMATURE CHILD

My child was a little seven-months baby, weighing only four pounds at birth, and now at five months he weighs ten pounds. Has he gained as much as he ought to have done under the circumstances?

Since the third month he has been artificially fed, taking ten tablespoonfuls or more at a time of his food every two hours in the daytime and two or three times at night. Is he fed too much and too often?

Should he be considered and treated, as regards his food, as a five-months or a three-months-old baby?

The gain seems very satisfactory, his weight being two and a half times what it was at birth.

Probably you could begin to widen the intervals of feeding with advantage.

It is not easy to say for how long and how much allowance should be made for premature birth. We think it safe to make an allowance, gradually diminishing, until the end of a year, and longer if the child is feeble. Your baby at five months, for instance, could be considered a four-months baby; at ten months, as nine and a half. This, of course, is only approximate, and the real guide is the condition as to strength, etc., of the particular baby.

BUTTER AND EGGS FOR A CHILD OF DELICATE DIGESTION

I have a little girl of two and a half years, and should very much like to have your views regarding butter and eggs as a regular diet for her. She has had added to her hominy and milk a little cream, also a little cream to her milk for breakfast. After the hominy she has had a soft-boiled egg, topping off with bread and butter. She has just had a bilious attack, vomiting at intervals for some hours. She threw off considerable bile. Finally, after a sufficient lapse of time, a mixture of bismuth was given to her, when she went to bed and slept soundly throughout the night, and was "as bright as a button" in the morning, and is all right now. What I wish to avoid is a repetition of the attack. What, then, is your opinion of butter, in the first place, if given liberally to children, and what do you think of a soft-boiled egg every morning as part of baby's breakfast? My little one has a delicate frame and digestion, but is perfectly well and healthy.

Butter in moderation is usually advantageous as being an easily assimilated animal fat. But it would seem that you

have given it to your little girl without moderation. Thus, she had it in the milk on her hominy; she had more in the added cream, again in the milk she drank and in the second added cream, and then she "topped off" with more on her bread. Probably, altogether, she got at least as much as a man of strong digestion would take for his breakfast. It does not seem necessary to add cream to good undiluted milk —indeed, usually it is injudicious, and a child who uses much good milk does not need additional butter.

The fresh egg also is usually well borne, and probably will be again if you moderate the amount of fat you give with it. Try hominy, milk, and the egg, giving the egg on alternate days, limiting the amount of milk at that meal and watching the effect.

The fact that your little one has a delicate digestion should render you careful, and she may be one of those persons (who are not so common as is supposed) with whom eggs do not agree; but before believing this, try the above suggestions.

PROPER DILUTION OF CONDENSED MILK

Nature has deprived me of nourishment for my little one, who is five months old. I have given her condensed milk, properly diluted with water that has been boiled, with a tiny pinch of salt and a little lime-water added to it. These are the proportions: six ounces boiled water, two teaspoonfuls of condensed milk, a pinch of salt, two teaspoonfuls of lime-water. She takes about this amount every three hours during the day and about half the amount once during the night. She weighed seven pounds at birth, and now, at five months, weighs seventeen pounds, and seems very strong. Her only difficulty is constipation, which I have heard is a usual occurrence with bottle-fed babies.

Would you continue with the condensed milk, when she has gained so much, and seems so well, and I have used nothing else? If not, what do you recommend that is better?

Am I using the right proportions for her age, and are forty-two ounces too much in quantity for twenty-four hours?

When a child is really doing well we do not advise change even if the food is not what it ought to be. Many children, like many adults, have sufficient digestive power to be nourished by imperfect food. In practice—especially in dispensary practice—condensed milk is often the best food that can be obtained, and its deficiency in fat can be made up by using cod-liver oil, and the sugar deficiency, which exists if it is properly diluted, made up by adding sugar.

This being the case, it is not easy to say what are correct proportions as regards a food which is admittedly imperfect. Condensed milk which is preserved and canned is inferior to that made by the same makers and sold in many cities from delivery wagons. This last is only a substitute for good, ordinary milk whenever the latter is not to be easily had. We think that you dilute the condensed milk too much for an adequate food; its high dilution makes it easily digested but not very nutritious. By increasing the strength of the mixture somewhat, from time to time, you can increase its nutritive power while you watch the digestion. If you wish to try another kind of food altogether, we would suggest that it be done under the advice of a good physician who has looked the baby over carefully to see what is lacking in her nutrition.

A "HARD-REARED" BABY

My baby has attained the age of sixteen months. He has been unavoidably bottle-fed, and has been what many would call a "hard-reared baby," but now seems perfectly healthy and fairly developed, walking, but not talking, and boasting the possession of ten teeth. His diet is still confined, of course, to milk, cream, oatmeal, an occasional fresh egg, roast potato, and bread and butter, of which last he is inordinately fond.

So far so good. But baby has one or two bad habits that seem to grow with his growth—first, exceeding restlessness at night; second, there seems to be an impossibility of weaning him of night feeding, or drinking rather.

He has never, I believe, slept a night continuously, whatever his

state of health. Just now his program is to wake once, say about 2 A.M., scream violently for a few minutes, and insist on having some one take him from his crib to amuse and pacify him, and finally, after about half an hour's recreation, he condescends to accept a full bottle and retires with his treasure. Frequently he drinks two or three bottles of milk through the night, although in the day he never looks for one, drinking from a glass or cup at meal-times.

I am quite at my wits' end. What am I to do? If I let him cry on without heed or help, it seems to me he will certainly cry himself to sickness, so violently does he set about it; and how can I wean him from drinking?

We will give what help we can on the facts stated. The phrase "hard-reared" we interpret to mean that his rearing was difficult, either from distinct sicknesses or from some delicacy or feebleness; if the latter, most probably digestive derangements. He now, at sixteen months, has ten teeth, probably the eight incisors and two of the first molars.

His "two bad habits" may be considered as manifestations of one. To give the cause of them, of course one should know a great many things not stated in the query. But one cause is suggested by the facts given. A child with probably only two molars has among its articles of diet two things notably hard of digestion at his age, and digestible only after prolonged chewing—namely, potato and bread. Both of them contain starch in a very large proportion. Fine wheat flour contains, according to some analyses, upward of seventy per cent. of starch, and bread made from it nearly fifty per cent., some of the starch having been changed by the raising and cooking of the bread. Raw potato has, say, ninety-two per cent. of starch. Now, without claiming, as some seem inclined to do, that starch is the great poison of infancy, it cannot be denied that it is very indigestible to children. Only prolonged chewing makes its digestion probable in adult life, and to many people it is always indigestible. To an infant as yet unsupplied with chewing-teeth (molars) it must be very difficult of digestion. The form of indigestion

need not be one that must cause immediate pain, or perhaps any great pain at all, but it may lead to derangements of a remoter kind. This may not be the case with your child, but we cannot help associating the starch and the restlessness.

The demand for the "full bottle" is probably a natural sequence of the other troubles, or it may be partly habit—we cannot speak with precision for want of information. We presume you have tried water to make sure it is not thirst that troubles the child. If you have not, try if a bottle of water, not too cold, will not content him. Many children, however, demand the bottle because they have been taught all their short lives to expect something to be put into their mouths as the preliminary to sleep. They do not need food any more than many men need spirits, but they have gained a habit. If we had to deal with a wakeful or restless child, and could find out only the things you have stated, we should first get rid of the starch, giving in place of the milk diet for one meal some beef-juice or good plain broth (bouillon) of beef or mutton. If he craved bread he should have only the hard crust, which is more digestible than the soft crumb and portions of which cannot be swallowed until they have been diligently chewed off from the piece. The details of the remaining management would depend upon the success attending the change of diet. It is well, however, in the case of any "hard-reared" child, to have occasional advice from the physician, who can work out all the real facts. What has been said above is based on the few placed before us.

PROBABLE OVERFEEDING; FREQUENT CHANGES OF FOOD; EXCESSIVE VOMITING

Ever since my baby was born he has vomited a great deal. I gave up nursing him when he was three months old and have tried everything for him, but the vomiting still continues, to an almost unlimited extent. The child grows steadily, nevertheless. Would you advise me to keep on trying the different foods until I get something which seems to agree with him, or go back to the sterilized milk with water and a little sugar

and lime-water, and just endure the vomiting? It occurs from the time he has taken his bottle possibly until three hours after. Is it healthful or not?

Vomiting is not healthful. Regurgitation of food, if the amount has been excessive, is not a sign of disease but of a physiological protest on the part of the stomach against such treatment. Just how long you have been trying to get a food to suit does not appear, as the age of the child at the time of writing is not given, and it may be that the child's digestion could be put right promptly by a little medical advice. But on general principles we may say that we do not approve of changing from food to food. The changes are not usually made for any reason except that the present one is not satisfactory. No attempt is made to ascertain *why* it disagrees, nor if the next would probably be better. If we had to try we should expect better success from a good milk mixture, varying the dilutions as indications arose, than from any series of artificial foods.

SUGGESTIONS FOR IMPROVING THE DIETARY IN A CASE OF SLOW TEETHING

My baby is fifteen months old, has only seven teeth, and weighs twenty-seven pounds. I feed her on broth and milk only, diluted with oatmeal gruel. The doctor says her slow teething is due to insufficient nourishment, and advises me to put soda crackers in her milk, and give her grits, biscuits, and meat to eat. Do you think she should have them? Are crackers better than light bread?

You put us in the dilemma of choosing between our own opinion, formed on general principles, about a case which we have not seen, and the opinion of a physician on the spot who has seen the case. It is usually safer to take the opinion of the man near by. Nevertheless, there is no harm in telling you the general principles which would guide us. First of all, the weight, twenty-seven pounds, is good enough for a child of fifteen months. The teething is slow. One

would expect all the incisors and the first molars in a breast-fed child of fifteen months; a bottle-fed child might be less forward. The weight and the state of teething are all the facts concerning the child you give us. Perhaps the physician based his judgment on many other things which you have not told us or have not noticed. However, proceeding on these two facts as a basis, we should say that backward teething alone is not sufficient ground for us to make a diagnosis of rickets, that form of malnutrition which particularly retards the development of the teeth. But assuming that we did consider that such a child, whose weight was beyond the average, was really insufficiently nourished, what would be the food we should add? Would it be starchy food, like bread or crackers, cereals, or potatoes? Now, for the proper digestion of starchy articles, they must be well chewed and mixed with saliva. A child without chewing-teeth cannot chew well, but if he had abundant saliva we might let him try some of the starchy articles. But they must be given in such a way that the saliva shall be mixed with them. This is not accomplished by mixing them with milk to be quickly swallowed, but by giving them as dry as possible, so that they must be sucked and chewed a great deal before swallowing. For instance, giving a crust of bread from which the soft part has been scraped away, or a slice of stale bread browned slowly in the oven, buttered when cold if butter be desired, is a favorite method with us for accomplishing this purpose. The kinds of soda crackers with which we are familiar are generally crumbly and not very well adapted to the purpose. If browned, as before described, slowly in the oven to a golden-brown tint, they will do better. There are many things that may be given, but we have confined ourselves to the questions propounded.

LOSS OF APPETITE; IMPERFECT NUTRITION

My baby girl is nearly eleven months old; she weighs twenty-two pounds and was doing nicely until lately, when she seems to have lost all her appetite, taking hardly a bottleful through

the day. I feed her on milk and some artificial food. What had I best do? She has but two teeth, yet she is said by all to be a healthy-looking child. Her hands, however, have been often cold and clammy.

The little girl has one evidence of good health—namely, fair weight. On the other hand, if a child of eleven months has but two teeth there is reason to think that in some way its nutrition is defective. In this case, moreover, the hands have been cold and clammy, which may be taken as an evidence of an imperfect circulation. At the moment of our correspondent's writing the appetite had failed. There are many points which are not stated, but we may give her a few hints regarding things to be looked after in her baby's case. The slow coming of teeth—in this instance not so very slow—is usually suggestive of that form of malnutrition called rickets.

The loss of appetite in a small child will ordinarily be better overcome by the removal of the cause than by the administration of tonics. The mother should, therefore, look to the condition of the digestive apparatus as well as she is able. She should notice if baby's tongue is clean or furred; whether the movements are natural as to color, consistency, and smell, or whether they are too dark or too light colored and chalky, constipated, or too liquid, offensive in smell, or too sour. Even if she is unable to correct the abnormal condition, it will enable her to give to the physician, when called, so clear an account of the state of affairs that he can prescribe with much greater certainty and effect. The mother may, however, do something by herself. If there be constipation with the furred tongue, the familiar remedy of the spiced syrup of rhubarb with the bicarbonate of soda in proper dose will be pretty certain to afford relief, at least for the time. If the movements are white and chalky, no remedy that can be prudently used without medical advice will be found more beneficial than the phosphate of soda; a small pinch of the powdered phosphate may be dissolved in a bottle

of milk, once, twice, or thrice a day; it is not objected to, as it resembles common salt in taste. If the stools are sour, the use of an alkali—lime-water if they are loose, bicarbonate of soda if they are constipated—may be of assistance. Better than all dosing, however, for correcting a disordered digestion usually is the change of food—bottle-fed children are here alone considered—and our preference is to give good sweet milk, diluted with water or barley-water, in place of any prepared or starchy food. By means of this change and the use of the simple remedies mentioned, much can be done to improve the condition of a baby's digestion; still, it seems to us the part of wisdom not to carry domestic practice very far if good medical advice can be obtained, but rather to procure explicit directions suited to the particular case, and exactly to follow them.

DISTASTE FOR MEAT

My little girl of five has from the time she first began to eat solid food had a dislike for meat in any shape. Neither steak, nor chops, nor fowl will tempt her. She is correspondingly fond of cereals, vegetables, and fruit, and eats a fair amount of bread and butter, eggs, etc. She has always liked milk. She is what is generally called a nervous child and not particularly robust, although in fair health most of the time. Do you think that she ought to be forced to eat meat? I don't like to make her uncomfortable at meal-times, and therefore have not tried to persuade her to eat it; but if it is best for her health to do so, I shall, of course, do everything to overcome her dislike.

There are few more disagreeable minor nuisances in society than people who are over-fastidious in the matter of diet, and education ought from the start tend to make children eat all wholesome food. Still, it is not advisable to force a child to eat what it honestly loathes. The opposite mistake is to humor its whims until one can hardly find enough to keep it from starvation at a table bountifully supplied with

proper dishes. As a nation we depend too much upon flesh-pots; yet a single meal daily at which meat is served is almost a necessity if one would have sturdy growth of health and strength, unless, indeed, a liberal supply of milk and eggs be deemed a sufficient substitute for meat. Coax and tempt your little girl to overcome her idiosyncrasy. Distaste for meat is not uncommon, although hardly so frequent as is the disposition to eat meat heartily to the exclusion of vegetables and cereals. Begin with insisting that a small piece of juicy meat shall be slowly masticated and swallowed before a coveted dainty is given.

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